Market Development Study for the Eastern North American Seed Potato Market

Prepared for:
The Department of Agriculture
and Rural Development
of New Brunswick
and
The Department of Regional
and Economic Expansion

Prepared by:
DPA Consulting Ltd.

Fredericton, New Brunswick
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FINAL REPORT

North American Seed Potato Market Development Study

PREPARED FOR:

N.B. Department of Agriculture and Rural Development

and

Agriculture Canada

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EXECUTIVE SUMMARY

Eastern North America is an important market for New Brunswick seed potatoes. Currently, New Brunswick sells 600,000 cwt of seed in this market.

At the present time, New Brunswick has approximately 10 percent of the total market with shares varying considerably between Canada (about 18%) and the U.S. (about 3%).

The market has been declining steadily over recent years, and is currently about 20% smaller than it was five years ago. This has had the effect of increasing the intensity of competition and marketing activities by New Brunswick s major competitors. However, throughout the period, New Brunswick has been able to maintain, and in some cases, increase, its market share. To a not insignificant extent, this has been assisted by substantial shortfalls in seed production programs in Ontario and Quebec and a decline in the use of holdover or non-certified seed by growers as the increasing costs of production make growers less inclined to take risks with their seed stocks.

The Seed Potato Industry in New Brunswick

The New Brunswick seed potato industry is part of a national standardized certification program, which is applied in a common fashion across the country and sets standards for disease resistance and inspections which are as high as or higher than any U.S. growing area. Standards are maintained by mandatory regular inspections, maintenance of a provincial seed farm, and identification of specially selected growers for production of elite levels of seed.

Marketing of seed potatoes is carried out by shippers who are licensed by the New Brunswick Potato Agency. Most of the shippers are also growers who have a shipper's license. Two principal marketing methods are used - direct contact with buyers (many such contacts have been established over generations of seed potato growers), and use of brokers in other regions. The former method is much more common in Quebec and Maine due to proximity and establishment of personal contacts over the years.

Agriculture Canada plays a major technical role in support of the industry. This is done through the operation of the certification program, the provision of inspections and technical assistance and advice to growers, and conducting Florida tests. Additionally, and of considerable importance for the New Brunswick industry, is the fact that the centre for Agriculture Canada's research activities in potatoes is based in Fredericton.

Funding through the federal/provincial Agriculture Sub-Agreement has also been an important contribution to the seed potato industry by providing financial assistance to growers to improve storages and increase storage capacity. The Sub-Agreement also provides funds for market research and market development in the area of seed potatoes.

The provincial government provides developmental assistance to the seed potato industry in a number of ways, such as the operation of the Bon Accord Seed Farm. Another important function of the Department of Agriculture and Rural Development is market development, which works with growers, shippers, and the Potato Agency, to identify market opportunities, conduct market research, and work with the industry to develop and improve marketing activities.

The New Brunwick Potato Agency has primarily focussed on tablestock and processing potatoes, although it has worked on behalf of the seed potato industry in several ways, including extensive involvement in activities related to the Canadian responses to U.S. claims of dumping and unfair trade practices in the U.S.

The Market

The market area covered by the study contains four growing seasons, some 362,000 acres of potato production and 5000 growers. Within the market area, 40-50 varieties are grown although the 8 leading varieties make up 75 percent of the total production.

Nine market segments were included for detailed analysis during the study:

- Quebec: This market represents about 900 thousand cwt of seed. New Brunswick currently has 25-30% of this market. The Province has good traditional ties into the market and a large percentage of the sales in Quebec are made through established personal contacts. P.E.I. has substantially increased its market share during the last two years, picking up virtually the total shortfall in Quebec seed production which has occurred during that time. As the province is able to re-establish its seed program and eventually move toward a level of self-sufficiency, New Brunswick will have to focus its marketing efforts on holding on to the existing market share. Any increases in marketings in Quebec will be temporary at best.

- Ontario: The Ontario market is similar in size to that of Quebec - in the 800-900 thousand cwt range. New Brunswick's share of this market currently stands at between eight and ten percent of this market. As in Quebec, Ontario has made some efforts toward increasing its domestic seed production, although the actual level of production has declined substantially in the last two years. New Brunswick's major competition in Ontario is Prince Edward Island, with 35-40% of the market. This market has a number of good opportunities for increasing the province's market share through increased awareness of the province's seed, some targeted marketing at large producer co-ops, and education of growers in the importance of planting certified seed.

- Atlantic Canada: New Brunswick has lost considerable ground in the Atlantic Canada market. Although the market is not very big (currently approximately 100 thousand cwt), the province's share is currently nine percent, from the 18-20 percent level of five years ago.

- Fall U.S.: The fall crop market segment is the largest segment in the growing region representing approximately 3.5 million cwt of seed per year. The region is a net "exporter" of seed, producing more seed than is required for use within the market segment. New Brunswick currently has a market share of about three percent in this segment. The major opportunities which exist are in the Long Island, New York area of the region where there is a movement toward the planting of golden nematode-resistant seed. One of the more popular varieties of this type is Hudson and New Brunswick is the only area outside

the State of New York which produced Hudson seed in 1982. The second major opportunity will be in Maine, which is attempting to increase its production of russet potatoes in response to major declines in market demand for the varieties which the State currently grows. Maine growers will be looking for russet seed for some years, until local seed production is at levels adequate to support the demand.

- Summer U.S.: The summer U.S. market segment is of the order of 900 thousand cwt. New Brunswick supplies between two and four percent of the seed requirements for this market segment. This market has not been a major one for New Brunswick in the past although in size it is equivalent to Ontario or Quebec. The majority of potatoes in this segment are grown for chipping and the segment has undergone several changes in varietal mix as chippers change their preferences for varieties. A strategy for marketing in this segment therefore involves technically-oriented approaches to the major processors to understand their requirements and promote New Brunswick varieties which would improve chipping yields and/or meet the chippers' requirements for taste, quality and appearance.

- Spring U.S.: In terms of market share, New Brunswick probably has a larger share of the spring U.S. market than it has of any other of the U.S. growing areas. It is estimated that the province may have as much as five percent of this market. In total, the market is approximately the same size as the summer U.S. market, at approximately 900 thousand cwt. The two major states within the market segment are Florida and North Carolina. As with the summer market, the

majority of the production is sold to chippers and therefore the major chipping varieties such as Sebago, Atlantic, LaChipper, Pungo, and Superior represent the majority of the varieties grown in this market segment. Growers tend to be organized into large producer associations and much of the seed buying is done by the association on behalf of an individual member or group of members.

- Home Gardens and Small Commercial Growers: Some of the seed currently being sold from New Brunswick is sold to garden centres and "feed and seed"-type operations, for resale to the small commercial grower and/or the home gardener. There is no data available about the overall size of this market. However, this market is estimated to be relatively large - in the range of 300-600 thousand cwt for both Canada and the U.S. combined. Marketing practices for the small gardener vary considerably, but in general, they do not have the sophistication of marketing efforts for other types of seed which are done through catalogues or attractive point of purchase displays. It is believed that a more detailed feasibility study of this market would identify a significant opportunity for creating a market through attractive small packaging, good growing and planting instructions, and a range of seed suitable for different growing conditions and growing seasons.

Market Potential

Increasing New Brunswick's share of the Eastern North American market will depend on the province's ability to hold on to its existing markets in areas such as Ontario and Quebec where domestic seed production is expected to increase while total planted acres for table and processing

stock will continue to decline. In addition the province will require to exploit several opportunities, including:

- increasing and capturing many of the Quebec and Ontario growers planting certified seed as opposed to held-over and uncertified
- obtaining some contracts with large grower groups in Ontario
- increasing the volume of sales of Snepody seed to displace other seed varieties now produced in Ontario and Quebec
- increasing sales of Russet Burbank into Maine
- providing more nematode resistant seed into the Long Island market
- substantially increasing awareness of, and demand for, New Brunswick seed in all U.S. market segments
- obtaining a substantial portion of the small farm and garden market.

It is not unrealistic to expect an increase of fifty percent in the province's total sales over the next five years if the opportunities are systematically addressed and exploited.

By contrast, a continuation of current market practices supported by additional efforts aimed at holding on to existing market share and increased activity in the U.S., should enable the province to maintain the rate of growth which it has experienced over the past five years (i.e. about 3-5% per year).

If some specific actions are not taken, there is a risk that the province could see a substantial erosion of its market share, particularly if Ontario and Quebec are able to turn around their seed programs and if the U.S. pressures to reduce Canadian imports are able to change current buying patterns. It is possible in this case that the province could see its sales reduced by 25 percent over the same time.

Market Assessment

As a participant in the National Certification Program, New Brunswick's seed quality is expected to meet minimum standards which are the highest in the industry. One component of the certification program which is absent in New Brunswick is mandatory Florida testing. This is standard practice in most of the U.S. states and U.S. (as well as many Canadian) growers are accustomed to requesting U.S. test results when ordering seed.

Altnough New Brunswick seed was acknowledged to meet the high standards of certification, the quality and appearance were not felt of a similar high caliber. New Brunswick has a problem when its seed is compared with that of Prince Edward Island's, since the quality of the soil in P.E.I. leads to a very attractive potato, free from bruises and rocks, and of an attractive colour. This is an admitted weakness which has been recognized by the province as a disadvantage and which must be offset by other factors such as price when marketing.

The general impression given during the study was that the quality of New Brunswick seed is not consistantly good and that some problems in the past with grading and transportation have lead to growers ceasing to use New Brunswick seed.

Tagging and grading is not done on any consistant basis in any of the U.S. market segments. Each state has its own system, although the underlying basis for tagging in the U.S. is the "U.S. Standards for Grades of Seed Potatoes", whereas in Canada tagging is done by seed class. Generally in the U.S., a blue tag denotes the highest grade of seed and other colors represent more inferior quality offerings.

In Canada, on the other hand, the highest quality seed sold for export, namely foundation, has a red tag, which may mislead some U.S. buyers into thinking they have received substandard seed when in fact the opposite is the case.

Marketing in the U.S. is conducted through journals and magazines by major seed companies as well as by states and/or seed grower associations. New Brunswick's marketing efforts have largely been focused on personal contacts and working through brokers to find market opportunities. In the U.S., state seed books tend to provide a considerable amount of information in addition to simply listing growers, which is useful to potential seed buyers. The information typically includes descriptions of seed varieties, uses and the state grading and certification standards. Frequently lists of shippers and growers including telephone numbers are included to assist the buyer in obtaining seed.

Market Development Strategy

The key relevant strengths of New Brunswick seed production and marketing system upon which a strategy for increasing markets can be built include:

- certification standards which are as high as or higher than any other growing area in the industry;
- part of a national certification program;
- the sole source for some seed varieties;
- the existance of experienced shippers with well established market contacts.

Building on these strengths, the market strategy for the Eastern U.S. market focuses on three strategic objectives:

Strategic Objective #1: Create a New Image of High Quality for New Brunswick Seed Potatoes

- establishment by the shippers, on a voluntary basis, of a company to market seed potatoes meeting the highest standards in the industry.

Strategic Objective #2: Double U.S. Market Share Over Next Five Years

- open a U.S. office to provide market support, market intelligence, after-market follow-up and identify opportunities;

- develop a promotional package using high-circulation U.S. trade publications;

- maintain regular communication with U S. brokers;

- use Canadian consulate staff to support market activities;

- exploit immediately emerging opportunities for nematode-resistant seed on Long Island;

- use provincial and federal agricultural representatives to support marketing efforts through test plot programs, variety trials and sharing other professional activities;

- organize regular incoming missions for buyers and brokers;

- undertake a study of the feasibility of packaging seed in attractive, small containers for the home garden market;

- change the "seed book" to make it more useful as a marketing tool.

Strategic Objective #3: Increase Sales in Ontario by 50% Over Next Five Years

- actively promote the increased use of certified seed;

- seek out a large contract to supply a group of growers with seed;

- promote New Brunswick seed in Canadian trade journals, farm publications and weekly papers.

Implementation of the market development strategy will require several initiatives on the part of shippers, growers, and federal and provincial departments of agriculture. An implementation plan gives the steps which are required to be undertaken by each organization.

1.0 INTRODUCTION

This report presents an analysis of the eastern North American Seed Potato market and a market development strategy to assist the New Brunswick seed potato industry in increasing its share of the market. The report contains an assessment of the current organization of seed potato production and marketing in the province; a descriptive and quantitative analysis of four major market segments and their market share potential; and identification of specific actions which are required to exploit the potential market, increase New Brunswick's share, and generate increased sales for the province's growers.

1.1 Study Approach

This study was commissioned jointly by DREE and the New Brunswick Department of Agriculture and Rural Development. A steering committee, composed of members of the two departments, the New Brunswick Potato Agency, the New Brunswick Association of Seed Potato Growers, and the New Brunswick Potato Shippers Association, monitored the study and provided direction and comments to the consultants.

The study proceeded in essentially three distinct phases. The first phase involved compilation of a quantitative description of the market--production by variety, seed shipments by shipper and destination, and historical trends in variety use. This phase also involved identification of major participants in seed potato marketing; namely, brokers and shippers both in New Brunswick and elsewhere. A preliminary round of interviews was also conducted in this phase. The results of this phase were used to assess possible alternatives for market segmentation and selection of the following segments: Quebec, Ontario, Fall U.S., Summer U.S., and Spring U.S.

In the second phase of the study, extensive personal and telephone interviewing was carried out at three levels:

- individual growers (100 in Canada and 50 in the United States) by means of a detailed questionnaire survey administered by telephone (see Appendix A);

- brokers, receiver/shippers, grower associations and agricultural representatives in each market segment; and

- New Brunswick shippers and growers and personnel from the Departments of Agriculture and External Affairs.

A list of individuals contacted is provided in Appendix B. The purpose of this phase was to obtain a qualitative assessment of the market characteristics of each market segment.

Finally, the third phase involved analysis and synthesis of the findings, development of a strategy, review with the steering committee and preparation of the final report.

1.2 Organization of the Report

The report is organized in six chapters and Appendices.

Chapter 1 outlines the background to the study and the approach and methodology followed.

Chapter 2 describes the characteristics of the New Brunswick seed potato industry. This chapter includes a description of the seed potato certification process, varieties grown and variety selection, the roles of the various participants in the industry, an overview of seed potato production and shipments, and a description of export quotas, tariffs and regulations.

Chapter 3 describes the seed potato market by market segment including an assessment of New Brunswick's market position and market potential.

Chapter 4 provides an assessment of New Brunswick seed potatoes and marketing efforts. Current marketing practices, distribution channels and varieties are discussed.

Chapter 5 outlines the strengths and weaknesses of New Brunswick seed potatoes and the constraints and limitations to expanding the present market and developing new ones. This chapter concludes with a market development strategy for the New Brunswick seed potato industry.

Chapter 6 provides an implementation plan and a list of activities, in order of priority, to be undertaken by the various participants in the marketing of seed potatoes.

2.0 CHARACTERISTICS OF THE N.B. SEED POTATO INDUSTRY

2.1 Certification

A single seed potato certification program applies to all potato growing areas in Canada. The program is administered by the Seed Potato Division of Agriculture Canada's Food Production and Inspection Branch. Seed progresses through five classes, dropping a class when harvested each year. The five classes of seed are; Elite I, Elite II, Elite III, Foundation and Certified. The rules and requirements for seed potatoes are specified in the Seed Potato Act. All Elite classes and Foundation seed must be inspected three times during the growing season by staff of the Food Production and Inspection Branch. Certified seed requires two inspections. Seed potatoes storage facilities and handling procedures must meet a series of standards prescribed in the legislation for varietal mixture and symptoms of disease.

In addition to passing field inspections, seed potatoes must also be inspected at the time of shipment. Once the crop has passed this final inspection, official seed tags are issued by Agriculture Canada. These tags show the grade, size and variety of the potatoes as well as the certificate number and the date the tag was issued. Seed potatoes are ready for shipping once they have been packed in appropriate bags with proper markings and affixed with the official tags.

Seed potatoes may be shipped in bulk provided a permit is obtained from an inspector and two copies of the permit accompany the potatoes when they are shipped. The equipment to be used in bulk shipping must be

disinfected to the satisfaction of an inspector. Seed potatoes which are purchased in bulk cannot be resold in bulk, however, they can be graded and packaged for resale provided they meet prescribed disease standards.

2.2 Varieties

Approximately 20 varieties of seed potatoes are produced in New Brunswick in any given year. Five varieties make up over ninety percent of all seed production in the province (Kennebec, Russet Burbank, Pontiac, Superior and Katandin).

Exhibit 2-1 provides a breakdown of the acreage of New Brunswick certified seed potatoes passing inspection by variety for the years 1977 to 1982. The total acreage of seed potatoes during this period has remained relatively stable; however, there have been changes in acreage by variety. Kennebec seed production, for example, has declined from 10,700 acres in 1976 to 6,600 acres in 1982. Similarly, the acreage of Katandin seed has gone from 1,811 acres in 1978 to 830 acres in 1982.

2.3 Growers

There are approximately 700 producers growing potatoes in New Brunswick. In 1982 there were 427 growers who applied to have all or a portion of their crop certified seed. Approximately 96% of these applications (representing 18,600 acres) were approved after field inspection by staff of Agriculture Canada. Over the last ten years the number of approved seed growers has remained at approximately 400. Of these, 25 are Elite seed growers producing Elite I, II and III classes. Eighty five growers selected by Seed Potato

EXHIBIT 2-1: ACREAGE OF NEW BRUNSWICK CERTIFIED SEED POTATOES PASSING INSPECTION BY VARIETY, 1977 - 1982 (1000 Acres)

	1977	1978	1979	1980	1981	1982
Kennebec	10.0	10.0	10.7	8.8	7.0	6.6
Russet Burbank	4.1	4.8	3.2	7.7	4.7	6.6
Red Pontiac	3.4	2.6	2.4	2.8	3.1	2.5
Superior	.9	1.0	1.1	1.4	2.2	2.9
Katahdin	1.7	1.8	1.3	.9	.8	.8
Belleisle	.10	.1	.1	.3	.4	.1
Sebago	.19	.4	.4	.3	.2	.3
Chieftain	--	--	.1	.1	.2	.1
Bintje	--	--	.1	.1	.1	.1
Keswick	.12	.1	.1	.1	.1	.1
Atlantic	--	--	--	.1	.1	.1
Shepody	--	--	--	.1	.1	.3
Norchip	.1	.1	.2	.2	.1	.1
Irish Cobbler	.1	.1	.1	.1	.1	.1
Green Mtn.	.1	.1	.1	.1	.1	.1
Jemseg	--	.1	.1	.1	.1	.1
Tobique	.1	.1	.2	.1	.1	.1
Norland	--	--	.1	--	.1	.1
Sable	.1	.1	.1	.1	.1	.1
Monona	--	--	--	.1	--	.1
Arran Consul	.1	--	--	--	--	--
Abnaki	.1	--	--	--	--	--
Other	.1	.1	.1	.1	.1	.2
TOTAL	20.9	21.2	19.9	22.8	19.3	20.9

Source: Crop and Seasonal Price Summaries
Market Information Service
Production and Marketing Branch Agriculture Canada

certification personnel of Agriculture Canada are eligible to purchase elite seed from the government operated Elite seed farm to produce Elite III, Foundation and Certified seed. An additional 290 growers in the province are commercial seed growers producing Foundation and Certified classes.

New Brunswick Potato growers are located primarily in the Saint John River Valley between Woodstock and Grand Falls in the Counties of Carleton and Victoria. In 1982, 137 growers in Carleton County entered 8,900 acres of potatoes for certification while 194 growers entered 16,100 acres in Victoria County. These two counties accounted for 86% of the total provincial potato acreage entered for certification in 1982.

2.4 Shippers

Most shippers in the province ship both tablestock and seed potatoes although some shippers specialize in or concentrate on seed. All shippers are licensed by the New Brunswick Potato Agency. In 1983 there were 66 licensed shippers operating in the province. The New Brunswick Potato Shippers Association is a voluntary association (currently about 55 shippers belong) which participates on behalf of its membership in such activities as; freight rate negotiations, negotiations relating to weight restrictions on roads and organizing both incoming and outgoing trade missions. Funding for the Association's activities come from membership dues.

A special tabulation of seed potato shipments by shippers was made for the 1981 crop year. In that year 30 shippers sold seed potatoes in Quebec. Of the thirty, two shippers accounted for 50% of all seed shipments into Quebec.

Twenty-one shippers sold seed potatoes in Ontario. As in the case of Quebec, two shippers accounted for nearly 50% of the shipments. Two shippers accounted for 81% of total seed shipments to Nova Scotia.

A much greater number, 59, shippers exported seed potatoes to the U.S. Of these, 11 accounted for approximately 78% of seed shipments.

Overall, approximately seventy percent of the total New Brunswick sales outside the province were made by fourteen shippers. Apart from several shippers who have concentrated most of their marketing efforts in Quebec, shippers tend to be active in all market areas.

2.5 Agriculture Canada

Agriculture Canada conducts extensive research into potato varieties, particularly at its Fredericton research station. Research centers around the breeding and testing of varieties, development of technology for superior seed production, and the improvement of crop and pest management. In addition, the Department administers the seed certification program through visual inspections of fields submitted for certification.

2.6 Potatoes Canada

Export market development for all foreign markets (except the U.S.) for seed potatoes is the primary responsibility of Potatoes Canada. This agency was incorporated through the combined efforts of Agriculture Canada; New Brunswick Department of

Agriculture, Prince Edward Island Department of Agriculture and Canada's major seed potato exporters. Although Potatoes Canada nas no jurisdiction in the markets which are the subject of this study its organization is described since some of its efforts are useful models for consideration in North America. Potatoes Canada is not a selling agency but is involved in market promotion with the objective of increasing use of Canadian Seed Potatoes abroad (i.e. offshore). The Agency is currently involved in a number of programs including:

(1) Establishment and monitoring of variety trials abroad.
(2) Coordinating visits by buyer and technical delegations from abroad.
(3) Distribution of information on offsnore markets to growers.
(4) Assists in coordinating a technical training program for outside technicians.
(5) Generally, the Agency promotes Canadian seed potatoes and monitors the needs and specifications of offshore markets.

2.7 New Brunswick Department of Agriculture and Rural Development

The Provincial Department of Agriculture and Rural Development provides services to the potato industry through research and extension services and the Market Development Branch. Of particular importance to the seed potato industry is the Elite Seed Farm at Bon Accord, the Florida Tests Program and the Quality Seed Potato Marketing Program.

The Bon Accord Elite Seed Potato Farm is owned and operated by the New Brunswick Department of Agriculture. It is located at Bon Accord in the Upper Saint John River Valley. The purpose of the farm is to supply high quality, tested seed stock to the industry.

The farm includes 1000 acres of which approximately 365 acres is cultivated. However, only about 65 acres of Elite seed potatoes are produced each year including the following three classes; Pre-Elite, Elite I and Elite II. All seed produced at Bon Accord is grown from virus tested stocks and stringent controls are employed to prevent the introduction of disease. In addition, an elaborate monitoring program has been established to detect any disease during the growing stage.

There are 25 Elite and approximately 85 recommended seed growers who are eligible to buy seed from Bon Accord. These growers are selected by seed certification personnel of Agriculture Canada, based on their past performance as growers. The Bon Accord Elite Seed Potato Farm Management Committee establishes the price at which the seed is to be sold. Normally prices are in line with prevailing market prices.

The Florida Test Program is carried out by Agriculture Canada - Food Production and Inspection Branch to improve the quality of New Brunswick seed potatoes. All seed growers submit to the department samples of the seed potatoes they plan to grow or sell. Samples are collected at the time of digging and the larger the field the larger the size of the sample taken. During the growing stage, readings for virus disease symptoms are conducted at weekly intervals. The owner is advised of the virus content so that he is aware of the extent of disease that may be present in his seed. The information can be useful in obtaining seed sales or making decisions about replanting.

The department's Quality Seed Potato Marketing Program has been the focus of market development efforts since the fall of 1982. This program is designed to; follow-up on market opportunities, provide after sales service, plan outgoing trade missions and produce sales promotional materials for Seed potatoes. Since its inception the quality Seed Potato Marketing Program has been aimed almost exclusively at offshore seed potato markets.

2.8 The New Brunswick Potato Agency

The New Brunswick Potato Agency was formed under the Farm Products Marketing Act in April of 1980. The Act assigns to the Agency a broad range of powers in relation to potato marketing. Use of these powers is subject to approval by the Board of the Agency. A summary of the principal powers is contained in the list below. In practice, few of these powers have been recognized as appropriate by Agency members and thus have not been implemented. Those indicated with an asterisk are in effect at the present:

- fix, allot and regulate quotas.

* - require persons involved in producing or marketing potatoes to register with and obtain licences from the agency. The agency can also collect licence fees from persons producing or marketing potatoes.

- fix the maximum or minimum prices at which potatoes can be sold and conduct a pool or pools for the distribution of money received from the sale of potatoes.

- require any person who produces potatoes to sell potatoes to the Agency or an agent designated by the Agency.

* - act jointly with any Canadian or Provincial Board to market potatoes.

* - conduct and carry out production and marketing research studies.

- assist and educate producers in production, processing and marketing of potatoes.

* - organize and conduct advertising and promotional campaigns and carry on sales promotion activities.

- work with the Government and appropriate agencies to establish price stablization or price insurance programs.

* - cooperate with producer groups from other Provinces to establish a Regional or National Potato Agency.

The Board of the Agency is composed of ten Directors who must be potato producers. The Directors are elected by the membership (producers) of the Agency. To date, the Agency has been primarily involved in: assisting and educating producers and shippers in potato marketing; promoting New Brunswick potatoes in cooperation with the Provincial Department of Agriculture; and representing the interests of producers at national, International, and regional meetings of interest and importance.

2.9 Exports to the U.S. - Tariffs and Quotas

For purposes of U.S. tariff treatment, the term "seed potatoes" refers to potatoes selected for their ability to most likely produce a disease-free crop, used mainly for planting. In order to enter the United States, seed potatoes must be "certified by a responsible officer or agency of a foreign government in accordance with official rules and regulations to have been grown and approved especially for use as seed," and must be "in containers marked with the foreign government's official certified seed potato tags." The Federal or Federal-State Inspection Service of the USDA and the Production and Marketing Branch of Agriculture Canada are designated as Governmental inspection agencies for certifying lots as meeting the requirements. It is the responsibility of the importer to obtain the necessary certification. Under an agreement between the USDA and Agriculture Canada, certificates on produce requiring inspection are accepted by each country at face value.

Tariff rate quotas on seed potato imports into the U.S. have been in effect in one form or another since a 1936 trade agreement between Canada and the U.S.. A later agreement under GATT effective January 1, 1948 raised the quota to 1.5 million cwt. during each year, beginning September 15. This was reduced to 1.14 million cwt. in 1957. The duty on seed was established at 37.5 cents per cwt. up to the quota, and 75 cents per cwt. over the quota. In 1980, at the Tokyo round of Multilateral Trade Negotiations, the tariff provisions on seed potatoes were changed to reduce duty rates on over-quota shipments. The effect, by 1987, will be to 1) reduce tariffs on seed within the quota to 35 cents per hundred from 37.5 cents and; 2) reduce the

over-quota duty in annual 5 cent increments from 75 cents to 35 cents, effectively eliminating the quota by that date.

On September 15, 1983, the tariff on seed under the quota will be 36 cents, and over the quota 55 cents, a differential of only 19 cents.

The 1.14 million cwt. quota is applied on a first-come, first served basis. There is no inter-provincial allocation of the quota. The lower tariff applies until the quota is reached, at which time the higher tariff is applied until September 15 of the next growing season.

Historically, Canada has always advocated the elimination of quotas and harmonization of tariffs with the U.S. Now that this principle has been established in the tariff, it is unlikely that there will be any change in the tariff situation for seed potatoes in the forseeable future.

An additional feature of the Tokyo round changes was a similar phasing out of the quota on tablestock. In the past, there have been incidents in the U.S. of attempting to avoid paying the tablestock "double duty" once the quota had been reached by buying Canadian potatoes with seed tags (which were still under quota) and eventually re-selling these as tablestock. In 1983, in an effort to eliminate the practice of shipping seed as tablestock, the U.S. introduced an "End Use Certificate", which must be completed by the receiver of the seed to certify that it was in fact used as seed. This has caused some bad feelings toward the Canadian potato industry. The phased reduction in tariffs will eventually eliminate this practice completely since the differential tariff reduces each year and by 1987 there will be no quotas on seed or tablestock, and tariffs will be equalized at 35 cents per cwt.

3.0 MARKET DESCRIPTION

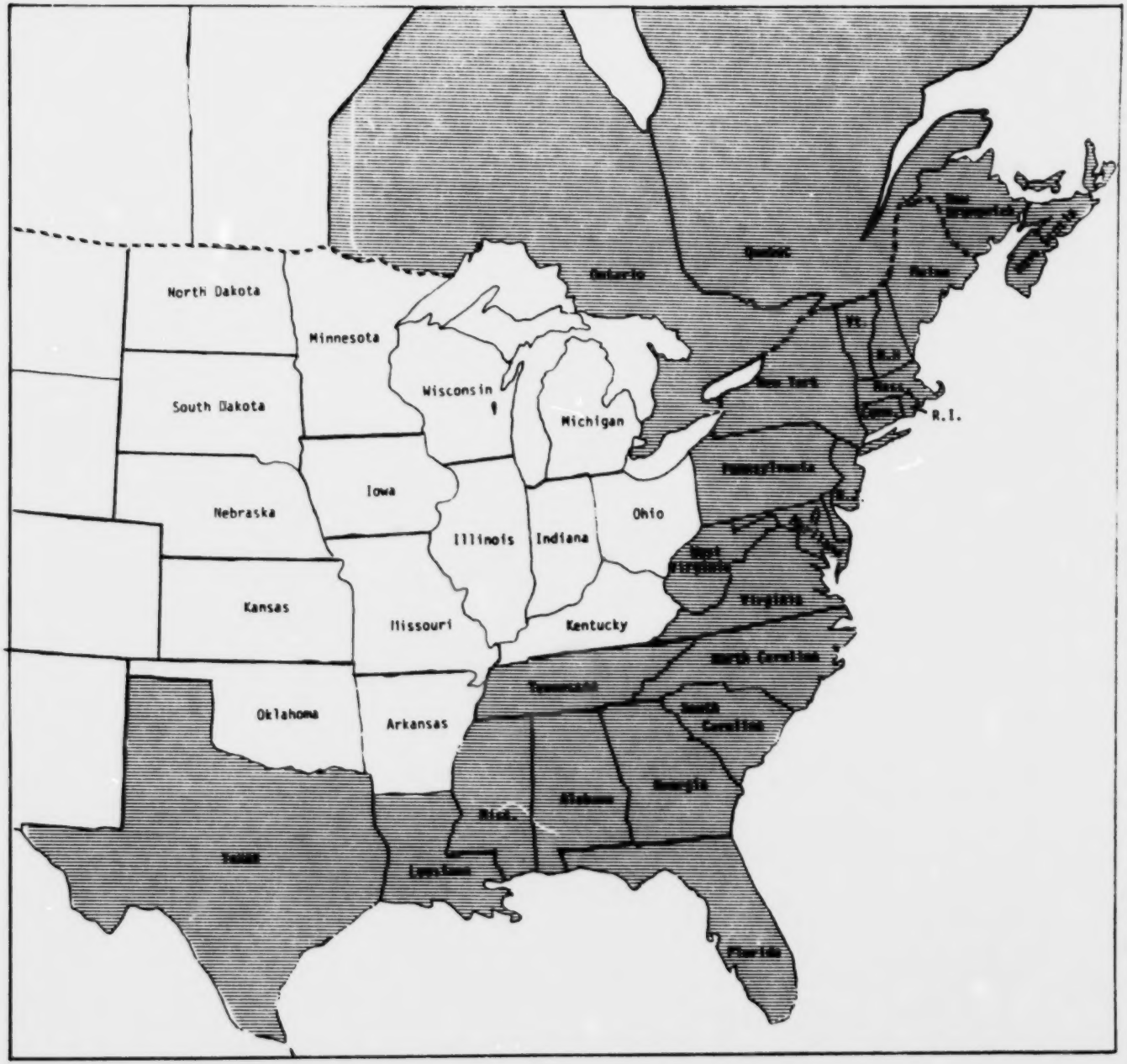
3.1 General Description of the Seed Potato Market

The eastern North American market included in the study is shown in the map in Exhibit 3.1.

The market includes the two largest potato producing provinces outside the Maritimes and two of the ten largest growing areas (by acreage) in the U.S.-- Maine and New York. In total the seed requirements amounted to some 7 million cwt. in 1982. The market area includes four separate growing seasons. The more southerly states produce no seed potatoes, primarily due to the difficulties in storage in the hot climates. All seed in these areas is therefore purchased from outside the region. Maine, at the other extremity of the market area is, by contrast, a significant net "exporter" of seed, and a major competitor in the U.S. market.

Estimating New Brunswick's share of the U.S. market is complicated by the fact that some of the seed shipped to the U.S. ends up as tablestock, even though the potatoes leave Canada with seed tags and meet all the requirements for seed exports. Based on interviews with shippers and growers, it is acknowledged that 1980 and 1981 crop years were years in which considerable amounts of seed likely ended up being used as tablestock. Total exports to the U.S. in those years were 637,000 cwt and 633,000 cwt respectively. In early 1983 the U.S. government imposed a requirement for an "end use certificate", which, it is believed, severely curtailed the previous practice of seed being shipped for tablestock. In 1982/83, total shipments declined to 386,000 cwt.

EXHIBIT 3-1: STUDY AREA



For 1981, a special study of shipments to the U.S. provided details of seed shipments by variety by state. If the varieties shipped to, but which are not known to be produced in a particular state are eliminated, the estimated total seed shipments for that year amount to 200,000 cwt.

This would appear to be consistent with the decline in sales following the imposition of the end use certificate. Therefore, for purposes of further analysis in this report, the estimated total seed shipments, used for seed, in the U.S. is in the range of 200-250 thousand cwt.

Based on this estimate, New Brunswick enjoys about 3 percent of the U.S. market.

Two provinces, Quebec and Ontario made up 33 percent of the total Canadian potato acreage. New Brunswick accounts for an estimated 18 percent of the seed used in these provinces market.

More detailed information about both the U.S. and Canadian market segments is included in later sections of this chapter.

The total market has been shrinking steadily over the last five years, having gone from 442,000 acres in 1978 to 372,000 acres last year. This has had the effect of intensifying the competition for markets.

Recent years have been difficult ones for the northeastern potato industry, and one of the responses in the United States has been an increasing mood of nationalism and "buy America".

The total market area comprises some 362,000 acres of potato production, with about 5000 growers. In total there are probably as many as 40 - 50 varieties in commercial production, although it is estimated that eight varieties make up 75 percent of the total potato crop.

New Brunswick's major competition in the U.S. comes from Maine, New York, Wisconsin, North Dakota, Minnesota and to a lesser extent, P.E.I.

In Canada, the most important competition is P.E.I. and increasingly (particularly in southwestern Ontario) the U.S. New Brunswick also competes with expanding (but at the present time shaky) local seed programs in Ontario and Quebec.

In this report, the market has been broken into five segments -- Quebec, Ontario, Spring U.S., Summer U.S. and Fall U.S. The winter U.S. market has not been described in any detail since few of the varieties grown are produced in New Brunswick.

An assessment of each market segment is provided in the following section of this chapter. Note that throughout the report, for the purpose of estimating seed requirements, a planting rate of 20 cwt per acre has been used, except in the case of Russet Burbank, where a factor of 10 cwt per acre has been used.

3.2 Quebec

Quebec has historically and traditionally been a major market for New Brunswick seed. Much of the seed moving into Quebec goes directly from grower to grower, following traditional contacts which have developed

over many years. Quebec has not, until recently, been a significant producer of seed for its own requirements and has "imported" most of its seed. The province is now committed to self-sufficiency in seed, which will mean that New Brunswick can anticipate an erosion of its share of the market over the long run. The Quebec seed program has in fact seen a major drop in certified acreage over the last two years; (see Exhibit 3-2) however, the 1986 target is for a return to pre - 1980 production levels.

EXHIBIT 3-2: QUEBEC SEED PRODUCTION, BY VARIETY, CROP YEARS 1976 - 1981 (in thousands of cwt.)

Variety	1976	1977	1978	1979	1980	1981
Kennebec	254	283	422	574	289	220
Katahdin	5	5	12	18	13	1
Green Mountain	8	14	10	9	3	5
Russet Burbank	2	2	1	1	4	2
Norland	8	11	4	8	9	1
Superior	21	15[1)]	4	89	226	100[1)]
Other Varieties	3	3[1)]	3	5	9	6[1)]
TOTAL	306	335	457	707	560	337

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1) Estimate

Source: Crop and Seasonal Price Summaries, Agriculture Canada

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3.2.1 Market Size

In Quebec the planted acreage of potatoes remained relatively constant at about 45,000 acres between 1976 and 1981. The total seed market is thus in the order of 900 thousand cwt. Quebec produces about one-half of its own requirements at the present time. New Brunswick supplied between 245 and 260 thousand cwt. of seed potatoes to Quebec each year during the period 1977 - 1981 or approximately 25-30 % of the total requirements.*

3.2.2 Trends and Issues

Most discussions with individuals familiar with the Quebec potato industry suggest that it is unlikely that there will be significant changes in the acreage planted in the short to medium term. The trend most likely to impact on New Brunswick's market position is the increasing volume of seed production in Quebec, although there have been concerns expressed about the quality of Quebec - grown seed (seed production declined by 40% in 1981, and is less than half of its 1979 level), it is not unreasonable to assume that over the next ten years, continued improvements can be made and the province will attain its goal of self-sufficiency in seed. There will continue to remain some opportunities for New Brunswick, in varieties not produced by Quebec, and through many of the strong personal contacts which have developed. (Even in 1979,

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* Data released on the 1982 crop since the draft of this report was prepared, indicate a major increase in New Brunswick sales to Quebec. Up to June 30, New Brunswick shipped 350,433 cwt, or close to 40% of the total requirements assuming the number of acres planted in 1983 are at or near the 1982 level.

when Quebec's seed production was at its highest level, New Brunswick's shipments did not decline by any significant amount). Similarly, if the Quebec seed program is accompanied by a requirement to plant certified seed (as is now the case in New Brunswick), additional new markets will also open up. The market strategy for this segment should therefore focus on maintaining the share of the market which New Brunswick presently enjoys.

3.2.3 Varietal Mix

Close to 90% of Quebec's total 1982 plantings were made up of two varieties (Kennebec - 45%, and Superior - 43%), Norchip the third largest variety, represents only 3% of all plantings. Superior is apparently gaining in importance and Kennebec declining somewhat.

3.2.4 Channels of Distribution

Sales of New Brunswick seed to Quebec are made through one of two channels:

- direct sales from a shipper or grower/shipper to a Quebec grower, and
- brokerage sales through a Quebec based broker.

As pointed out previously, New Brunswick growers have developed many personal contacts and direct sales are far more significant in this market than any other.

The survey of Quebec growers indicated that 70 percent purchased seed directly from a seed grower with the remaining 30 percent purchasing through a broker or combination broker and direct.

3.2.5 Size and Packaging

The results of the survey in Quebec suggest that there is no consistency in size preference, with fully 26 different responses out of 50 grower interviews. The most common response was 1-8 oz. with most other growers specifying sizes in the "B" range (1 1/2-4 oz.).

Large growers prefer bulk snipments and smaller growers tend to prefer 75 lb. packaging.

3.2.6 Experience with New Brunswick Seed

Most Quebec growers have been regular users of New Brunswick Seed. New Brunswick is the seed source preferred over all other sources, including Quebec. Sixty-one percent of growers have used New Brunswick seed in the past three years. Generally, users are very satisfied with New Brunswick seed. Brokers tended to feel that the alleged ring-rot problem had not affected perceptions of New Brunswick seed.

3.2.7 Competition and Market Shares

Sales of New Brunswick seed to Quebec have, in recent years, been at a level of approximately 30 % of total seed requirements. New Brunswick's seed snipments to Quebec for major varieties are shown in Exhibit 3-3. P.E.I. has a share approximately equal to that of New Brunswick. Quebec's share of the total seed planted in the province declined from about 50% three years ago to less than 25% in 1981 owing to the large decline in acreage approved for certification in 1980 and 1981.

EXHIBIT 3-3: NEW BRUNSWICK SEED POTATO SHIPMENTS TO QUEBEC, BY VARIETY 1977 - 1981 (thousand cwt.)

Variety	1977	1978	1979	1980	1981
Kennebec	192.1	216.5	157.7	154.6	157.0
Superior	37.4	53.7	73.4	72.0	79.3
Norchip	5.2	7.8	7.2	5.9	3.7
Katahdin	6.5	5.4	1.4	1.8	1.1
Keswick	2.5	5.2	3.3	2.9	3.7
All others	2.1	8.1	22.6	14.3	12.9
TOTAL	245.8	296.7	258.4	251.5	260.9

Source: Crop certification, Plant products and Quarantine Division, Agriculture Canada

Over those two periods of decline, New Brunswick's share remained constant while that of P.E.I. increased from around 20% to its 1982 level of 30%.*

* The 1983 shipments to Quebec from P.E.I. amounted to 123,000 cwt, down by more than 50% from the previous year, indicating that in 1983, New Brunswick growers displaced P.E.I. to a considerable degree, and P.E.I. has returned to its more historical market share level.

3.3 Ontario

Ontario has not in recent years been a large market for New Brunswick. Although by acreage the Ontario market is roughly as large as Quebec, and its seed production is about as large as Quebec's, (see Exhibit 3-4) New Brunswick's sales in Ontario are only about one-third as large as those in Quebec.

EXHIBIT 3-4: ONTARIO SEED PRODUCTION, BY VARIETY, CROP YEARS, 1976 - 1981 (thousand cwt.)

Variety	1976	1977	1978	1979	1980	1981
Kennebec	108	144	132	175	105	114
Norchip	43	22	70	104	141	105
Sebago	62	83	63	40	34	28
Katandin	40	28	27	21	16	14
Superior	35	32[1)]	18	69	48	70[1)]
Other Varieties	22	32[1)]	22	67	51	70[1)]
TOTAL	310	354	332	476	395	401

1) Estimate

Source: Crop and Seasonal Price Summaries, Agriculture Canada

3.3.1 Market Size

Planted acreage in Ontario has declined from a high of 48,000 acres in 1977, to about 36,000 acres in 1981. The total market for seed has thus declined in a similar pattern but is of the same order of magnitude as the Quebec market (i.e. 800-900 thousand CWT.).

3.3.2 Trends and Issues

Over the last five years production in Ontario has declined from 45,000 to 39,000 acres. The ability of the province to reverse this trend is hampered by stiff competition in the table stock market from other producing areas, notably P.E.I. Participants in the Ontario potato business are not optimistic about any significant increase in production. It is felt that in the next five years production will remain at or below its current level. In the event of a rise in production level it is unlikely that the five year high of 45,000 acres in 1979 would be exceeded.

Ontario has begun the development of a seed program, but results have been erratic so far. There has been a continuous decline in acreage certified since 1979. In 1982 the decline was about one-third from the 1981 level. The development of a provincial seed program adequate to make Ontario self sufficient should be considered a long range goal at best. There still remain several substantial market opportunities in this segment for New Brunswick seed.

There is an increasing incidence of use of U.S. seed in Ontario. Many of the growing areas are close to U.S. shipping points and transport costs are lower than for seed coming from the east. Furthermore, a number of large growers supply chippers in Michigan and have seed back on the return trip. There seems to be a good level of satisfaction with U.S. seed and this will be a factor to be countered by New Brunswick. Also, because of the short distances involved, U.S. seed growers can easily travel into the Leamington/Grand Bend areas to establish personal contact with Ontario growers.

Shepody was identified as a variety which is in good demand and where the plantings are definitely expected to increase. Although Norchip is the most commonly grown processing potato, growers have not had good results in all cases and are actively looking for a good alternative. Almost all the Norchip seed used in the province is produced in Ontario.

In the 1981 crop year, New Brunswick increased its sales of seed over the average of the three previous years by 11%, despite a reduction in processing and tablestock acreage in Ontario of some 12%. Based on shipments to the end of April 1983 compared to the same date in the previous year, the 1982 level of sales will be maintained.

3.3.3 Varietal Mix

The Potato Marketing Board in Ontario began keeping records of acreage by variety for the first time in 1981. For fresh potatoes, the distribution was:

Superior	38%	
Kennebec	35%	
Reds	5%	(mainly Chieftain and Rideau)
Norchip	4%	
Others	8%	

and for processing:

Norchip	34%
Kennebec	25%
Monona	14%
Superior	12%
Russets	9%
Shepody	4%

Based on a total seed requirement of 800 thousand cwt. and using a split of the acreage between table and processing based on the 1982 mix of 55% table and 45% processing, the total market by variety would be of the order of:

Kennebec	245 thousand cwt
Superior	210 thousand cwt
Norchip	140 thousand cwt
Monona	50 thousand cwt
Others	155 thousand cwt

3.3.4 Channels of Distribution

The channels of distribution are similar to those in Quebec. However, the grower-to-grower influence on seed sales for New Brunswick is smaller, probably in the 10-20% range. Ontario growers are clustered in a small number of growing areas (e.g. Leamington, Grand Bend, Alliston) and selling and storage co-operatives are used in several of the areas. Direct contact with some of these associations to provide the requirements for a number of growers in the co-op is an opportunity which several persons interviewed felt would be of interest to them. Some growers expressed an interest in buying (or enquiring further about) New Brunswick seed but clearly did not know how to make contact with the system or have any information about the varieties available by grower and/or shipper.

There appear to be far more established personal ties between Ontario and P.E.I. growers, with Ontario growers often visiting their P.E.I. suppliers during summer vacations.

3.3.5 Size and Packaging

Results of the grower survey indicate that most growers (96%) have a preference for a particular size of seed. In Ontario, the size mentioned most often by growers was "B" (41% of responses). The "B" size standard in Canada includes potatoes between 1 1/2 and 4 oz. Three other sizes were also mentioned during the grower survey including; 1.5-8 oz. (17%), 1.5-10 oz. (11%), and 1.5-3 oz. (11%). Most growers prefer a particular size of seed because it "fits their seed cutter". Other reasons for preferring a particular size were because the seed gave "better yields" or was "more manageable".

Most of the growers interviewed in Canada indicated that they prefer to receive seed in bulk. If packaged growers tended to prefer 75 lb. bags.

3.3.6 Experience with N.B. seed

In Ontario experience with New Brunswick seed has been generally positive, the only problems mentioned being those which are encountered with seed from any producing region. During the course of the grower interviews it became apparent that there is a preference for P.E.I. over New Brunswick seed in Ontario. At the same time, however, 75 percent of the Ontario growers interviewed who had used New Brunswick seed in the last three years indicated it was good seed.

The specific complaints about New Brunswick seed indicated the presence of rocks which affected seed cutters, an incident involving mixed Elite 3 seed and the presence of fusarium rot in loads of seed, which probably developed during transportation.

Generally, brokers feel that their customers are satisfied with the New Brunswick seed they have purchased.

A general observation made during the interviews was that, even though Ontario growers are relatively frequent users of New Brunswick seed, the seed program is not as well understood as would have been expected. For example; growers asked questions about the number of years seed was in the system before being flushed out; some growers like U.S. seed because it was "better quality", and others indicated that P.E.I.'s standards were higher.

3.3.7 Competition and Market Share

Based on estimates from persons involved in the industry in Ontario, the seed market in 1982 was divided approximately as follows:

35%	local grown
35 - 40%	P.E.I.
8 - 10%	New Brunswick
5%	U.S. (Michigan and Wisconsin)
10 - 15%	non-certified, held over etc.

As was the situation in Quebec, the amount of seed purchased outside the province increased dramatically even though planted acreage dropped in 1980 and 1981, as a result of a decline in certified Ontario acreage and the use of more certified seed. Exhibit 3-5 shows total New Brunswick shipments to Ontario over the past five years. Over the two years, New Brunswick's share increased by 1 - 2 percentage points, while P.E.I.'s share went from about 20% to its present level of 35 -

40%. The reasons for the major increase in P.E.I. sales appear to be the decline in Ontario seed production and a reduction in the incidence of planting uncertified seed.

EXHIBIT 3-5: N.B. SEED POTATO SHIPMENTS TO ONTARIO BY VARIETY, CROP YEARS 1977 - 1981 (THOUSAND CWT)

	1000 cwt				
VARIETY	1977	1978	1979	1980	1981
Kennebec	44.2	51.0	54.2	46.9	40.4
Red Pontiac	(1)	1.0	(1)	1.0	2.1
Netted Gem	(1)	1.0	(1)	2.2	1.6
Sebago	4.1	3.7	2.4	1.2	1.0
Superior	21.3	10.6	9.2	15.7	23.4
Katahdin	3.6	6.1	5.3	1.6	13.7
Norchip	7.0	4.1	5.4	4.2	1.9
All Other	.9	1.3	(1)	4.3	6.6
TOTAL	82.1	78.8	77.6	77.1	86.2

(1) Indicates less than 500 cwt

Source: Crop Certification, Plant Products and Quarantine Division, Agriculture Canada

New Brunswick's market share (in 1981) by variety for the four most common varieties is:

Kennebec	12 - 15%
Superior	8 - 10%
Norchip	0 - 2%
Monona	nil

Any real gains in market snare will come from four possible directions:

- a further reduction in Ontario's seed production (possible but unlikely)
- taking some of P.E.I.'s market share (possible if a well targeted effort)
- a continued reduction in the number of growers using non-certified seed (possible, particularly if Ontario introduces legislation similar to the Potato Disease Eradication Act)
- producing and selling seed varieties where New Brunswick is currently selling less than its overall share, such as Monona and Snepody.

3.4 Atlantic Canada

Although not included specifically in the market segments due to the small markets involved, Nova Scotia and Newfoundland were also considered briefly.

The planted acreage of seed potatoes in Nova Scotia and Newfoundland has remained constant at about 5,000 acres over the last five years. Seed requirements in these provinces amounts to about only 100 thousand cwt. per year of which New Brunswick supplies about 9 thousand cwt. or approximately 9% of the total seed requirements. Nova Scotia has supplied between 40% and 66% of its own seed during the last six years. P.E.I. supplies the balance.

Since 1978, New Brunswick seed shipments to Nova Scotia have declined by more than 50 percent. Kennebec is the most widely grown variety in Nova Scotia.

New Brunswick's share of the market has declined from about 12% in 1978 to 6% in 1981.

3.5 Eastern Fall U.S.

The "fall crop" market segment includes the states of Maine, New York, Pennsylvania, Conneticut, Massachusetts, Rhode Island and Vermont.

3.5.1 Size of Market

Total potato production in this region has declined from a high of 215,000 acres in 1977 to 182,000 acres in 1981 (refer to Exhibit 3-6). Three states make up 95% of all the production in this segment (Maine 58%, New York 25% and Pennsylvania 12%). The total seed used in the region is about 3.5 million cwt. per year. This market segment is a net "exporter" of seed, with total seed production being of the order of 8.5 million cwt. This includes all the production from acreage approved for certification, of which only a portion is actually used as seed (usually the smaller sizes).

3.5.2 Trends and Issues

In the last five years, planted acreage has decreased consistently throughout the region. In the immediate term it is not anticipated that any major increase in plantings will occur. The most likely outcome in the short to medium term is to remain at present levels or increase marginally.

The one area which is expected to experience a decrease in planted acreage is Long Island. The rise in land values has resulted in potato producing land being sold for development.

EXHIBIT 3-6: EASTERN U.S. PLANTED ACREAGE OF FALL-HARVESTED POTATOES BY STATE, CROP YEARS 1976 - 1981 (THOUSANDS OF ACRES)

State	1976	1977	1978	1979	1980	1981
Maine	116	124	119	116	108	106
New York	50	51	50	48	45	45
Pennsylvania	29	28	26	25	23	22
Connecticut	11	12	2	2	2	2
Massachusetts			4	4	3	3
Rhode Island			4	4	3	3
Vermont			1	1	1	1
TOTAL	206	215	205	199	185	182

Source: United States Department of Agriculture

Two trends are likely to impact on the market for seed from New Brunswick. One is the shift in Long Island toward seed which is resistant to golden nematode. It is likely to become a requirement that only golden nematode resistant seed be planted on Long Island. The particular variety favoured in the Long Island area is Hudson, altnough Atlantic, Rosa and Red Rosa all have resistance to the golden nematode and are listed in the state seed book. New Brunswick is currently the only producer of Hudson seed outside New York state. Currently, some 400 thousand cwt of seed is used in Long Island. The number of acres of Hudson certified in New York in 1982 was equivalent to 30 thousand cwt., and of this one-half is still at the 1 and 2 year

removed level only. This represents a major opportunity. Even if the move to nematode resistant seed is seen as a long term goal, there should be increasing requirements annually for Hudson seed.

The second trend is the recognition that the northeast, particularly Maine, has lost a lot of ground in the tablestock market by being slow to pick up on the market's change to russet potatoes. This was made very clear in the ITC hearings last year. Predictions are that there will be an increased percentage of Maine acreage planted in russets over the next five years. This represents a short- to - medium term opportunity for New Brunswick. Certified acreage of russet seed including Belrus and Russet Burbank in Maine in 1981 made up only 12 percent of the total acreage approved for certification in the state. If Maine should move to a situation where russets represent 50% of total production, there will be a shortfall of seed in the region of up to 200 thousand cwt. Depending on how quickly the state's seed program can produce the required amounts of russet seed, this gap may exist for several years.

3.5.3 Varietal Mix

The State of Maine produces two types of potatoes with russets comprising about 30% of production and round whites 70%. Virtually 100% of potatoes produced in New York and Pennsylvania are of the round white type. The primary varieties grown in the region in 1982 include; Superior, Katahdin and Russet Burbank. Exhibit 3-7 provides the percentage acreage planted by variety in 1982 for the three principal growing states in the region.

EXHIBIT 3-7: PERCENTAGE OF ACREAGE PLANTED OF U.S. FALL-HARVESTED POTATOES, BY VARIETY, AND STATE, 1982

Variety	% OF ACREAGE Maine	New York	Pennsylvania
Russet Burbank	23	--	--
Superior	26	49	13
Katahdin	14	35	30
Ontario	12	--	--
Chippewa	--	7	--
Norchip	--	--	29
Kennebec	--	--	10
Other	25	9	17
TOTAL	100	100	100

-- Not grown or less than 1%

Source: Crop Reporting Board Statistical Research Service, United States Department of Agriculture

The total market for seed, by variety in this segment, is thus approximately as follows: (in thousands of cwt.)

Russet Burbank	250
Superior	1,000
Katahdin	700
Ontario	250
Chippawa	50
Norchip	150
Kennebec	50
Others	650

3.5.4 Channels of Distribution

There are primarily three channels through which New Brunswick's seed potatoes may move into the northeastern United States; U.S. dealers, U.S. and Canada brokers and direct. In most cases the seed potatoes would move from a New Brunswick shipper through one of these channels into the United States, although it is possible that seed potatoes could go through a number of dealers and/or brokers before reaching the end user. It is estimated that approximately 70% of New Brunswick seed which goes into the northeastern United States is moved through U.S. brokers or dealers. Canadian brokers account for approximately 10-15% of New Brunswick seed sales in this region while direct sales to growers would also be in the range of 10-15%.

Most of the direct sales take place in Maine and are the result of established ties between Maine and New Brunswick growers.

3.5.5 Size and Packaging

Results of the survey of growers in the fall crop area of northeastern United States indicate a preference for "3" size seed. Reasons for preferring a particular size of seed were that it cuts better or fits the growers equipment better.

The majority of growers surveyed in this region (60%) indicated that they would prefer to receive seed in bulk. This concurs with the views of an agricultural representative in New York state who indicated that most growers in that state prefer bulk shipments because packaging increases their seed costs.

3.5.6 Experience with N.B. Seed

Only two of the ten growers interviewed in this segment had purchased New Brunswick seed in the past. These growers both stated that the New Brunswick seed was generally very good. Discussions with an agricultural representative and two brokers in New York state indicate growers have experienced some quality problems with New Brunswick seed, specificially cases where there have been too many rocks. In Long Island it was reported that an alleged leaf roll problem occurred several years ago which has hurt sales of New Brunswick seed in that area.

Of greater significance for New Brunswick growers was the comment made in all market segments that although the seed was generally acknowledged to be of high quality, growers preferred to "buy American". The recent anti-dumping case, publicity over seed being used as tablestock, and the generally depressed state of the northeastern potato industry, have all generated some sympathy for U.S. seed growers, and the specifying of U.S. over Canadian seed even though Canada's superior quality is acknowledged.

3.5.7 Competition and Market Shares

New Brunswick seed shipments to the Fall market segment in 1981 constituted approximately 5 percent of the segment's total seed requirements. This probably overstates New Brunswick's share of the market since some of the seed is known to have been sold to other states or regions by Maine dealers and some has probably also been used as tablestock. An approximate estimate of the market shares of each state or province supplying seed to this market is shown in Exhibit 3-8.

EXHIBIT 3-8: ESTIMATED PERCENTAGE SHARE OF FALL CROP U.S. SEED MARKET HELD BY PROVINCE AND STATE

	Estimated % of Market		
Supplier	Maine	New York	Pennsylvania
New Brunswick	0 - 3	0 - 3	0 - 3
P.E.I.	0 - 3	0 - 3	0 - 3
Maine	90+	15 - 25	50 - 60
New York	--	50 - 60	5 - 10
Pennsylvania	--	--	10 - 20
Wisconsin	--	0 - 5	5 - 10
Michigan	0 - 5	0 - 5	5 - 10
North Dakota	--	0 - 5	0 - 5

Source: DPA estimates.

This Exhibit shows that New Brunswick's principal competition comes from within the region. Maine in particular supplies nearly all of its own seed as well as most of the seed used in New York and Pennsylvania. Probably as much as 5 - 10 percent of the seed comes from the western states of Wisconsin and Michigan. Of four brokers outside Maine interviewed in this market segment, only one buys any New Brunswick seed and he places only one or two orders per year with New Brunswick shippers. All four brokers bought seed from Maine on a regular basis. Two of the brokers bought from upstate New York while P.E.I., Michigan and North Dakota were each mentioned once as a seed source.

3.6 Summer U.S.

The "summer crop" segment includes Maryland, New Jersey, Virginia, Delaware, and parts of Nortn Carolina, Texas and Alabama.

3.6.1 Size of Market

The total planted acreage of summer harvested potatoes in tne study area nas declined from a nigh of 62,000 acres in 1976 to 46,000 acres in 1981 (refer to Exnibit 3-9). Most of tne acreage decline took place in Virginia (wnere planted acreage nas slipped by more than 15,000 acres since 1978), and in Texas (planted acreage declined from 11,200 acres in 1978 to 6,800 acres in 1981). Tne current total market for seed in this market segment is approximately 900,000 cwt.

EXHIBIT 3-9: EASTERN U.S. PLANTED ACREAGE OF SUMMER-HARVESTED POTATOES, BY STATE, CROP YEARS 1976 - 1981 (THOUSANDS OF ACRES)

State	1976	1977	1978	1979	1980	1981
Alabama	9	8	8	10	10	9
Maryland	2	2	2	2	2	2
New Jersey	8	8	9	9	9	8
Nortn Carolina	4	4	4	4	4	4
Texas	10	11	11	11	8	7
Virginia	29	28	28	26	14	16
TOTAL	62	61	61	61	46	46

Source: United States Department of Agriculture

New Brunswick currently supplies very little seed to the eastern U.S. summer crop market. It is estimated based upon seed shipment statistics for 1981 and discussions with industry participants that New Brunswick supplies only 2-4% of the seed requirements in this market segment.

3.6.2 Trends and Issues

The 1983 summer potato crop in the eastern United States is expected to experience a decrease in planted acreage as well as a lower yield. An unusually wet spring has resulted in crops being planted late and in fact some of the seed purchased by growers had to be dumped. Production for 1983 could experience a decline of up to 20-30%.

In the medium term it is not expected that planted acreage will exceed levels experienced from 1980 to 1982 (approximately 46,000 acres). Informants in the summer crop market area are not optimistic about acreage increasing to the 1976 - 1979 levels (approximately 60,000) in the short to medium term.

Chippers are the principal market for growers in the summer market segment and can therefore have considerable influence when producers are deciding which variety to grow. In recent years, Chippers have moved away from Pungo, opting instead for Atlantic, and Superior. This trend is particularly evident in Virginia the largest growing state in the region, where there have been consistent decreases in the planted acreage of Pungo since 1979 and a marked increase in Atlantics and Superiors during the same period. (see Exhibit 3-10).

EXHIBIT 3-10 : VIRGINIA POTATO PRODUCTION BY VARIETY, 1978-1982

Variety	% of production 1978-79	1979-80	1980-81	1981-82
Pungo	29	50	45	28
Superior	27	27	32	39
Atlantic	1	4	8	14
LaChipper	9	8	6	6
Others	34	11	9	13
TOTAL	100	100	100	100

Source: Agriculture Extension Officer, State of Virginia

Virginia is the only state for which accurate data by variety is available. However, the pattern is very similar in the neighbouring states of Delaware and North Carolina as well.

The garden trade is a big market for some buyers contacted. A number of seed buyers mentioned that they sell significant amounts of seed to seed houses and garden centres. Currently, Kennebecs and Red Pontiacs are the most popular varieties for house and small farm gardens.

3.6.3 Varietal Mix

The total seed requirements, in thousands of cwt. by variety, is approximately as follows:

Sebago	50-100
Atlantic	150-200
LaChipper	0- 50
Pungo	100-150
Superior	350-400
Norgold Russet	50-100
Red Viking	50-100
Other	50-100

3.6.4 Channels of Distribution

In selling to the summer crop U.S. market most New Brunswick shippers go through brokers or dealers located in the United States. Dealers are used more often than brokers for the initial transaction. As in the case of other U.S. markets, a load of seed potatoes might move through two or more dealers or brokers before reaching the end user. It estimated that as much as 70-80% of New Brunswick shipments go through U.S. brokers or dealers, 10-20% through Canadian brokers and in the range of 0-10% goes direct to the end user.

Growers surveyed in the eastern United States summer crop area indicated that they preferred to buy direct from growers rather than through brokers. In fact as high as 40% of their seed purchases are direct, however, the majority of these direct purchases are from other U.S. states, in particular, Maine and Wisconsin.

In many cases a large grower in this market region will purchase seed for a number of smaller growers. This is especially true of North Carolina where a small number of buyers purchase most of the seed coming into the state.

3.6.5 Size and Packaging

Seed size is a very important factor which growers in the summer crop market segment consider when deciding which seed to buy. The growers surveyed indicated that there are two sizes that growers prefer; 1 1/2- 10 oz and 1 1/4 - 3 oz. The principal reason for preferring a particular size of seed is that it cuts better with the equipment they use.

Over the entire market segment about one-half of the growers expressed a preference for bulk shipments and the balance were evenly divided in their preference for 100 lb jute bags versus 50 lb paper bags. New Jersey growers expressed a strong preference for bulk shipments of seed. A New Jersey agricultural representative also indicated that grower preference was shifting to bulk seed shipments and that most growers were now equipped to handle seed in bulk.

3.6.6 Experience with N.B. Seed

Growers indicated that the origin of the seed is important in making their buying decision and virtually all growers had preferred growing areas. Wisconsin and Maine were mentioned as preferred growing areas most frequently while New Brunswick was not mentioned by any of the growers interviewed.

Of the 21 growers interviewed in the summer market segment, 5 have used N.B. seed in the past. All of the growers who had used N.B. seed had a positive impression with 3 of the 5 indicating it was very good.

All of the brokers interviewed in this market segment indicated that growers were generally quite satisfied with N.B. seed and could recall no serious complaints. Agricultural representatives suggested that there had been no apparent problems with N.B. seed. However, since its use in the region was so limited it was difficult to form a conclusive opinion.

3.6.8 Competition and Market Share

New Brunswick's two principal competitors in the summer crop market segment are Maine and Wisconsin. Maine currently is the leading supplier of seed going into Virginia, New Jersey, North Carolina and Maryland. A significant amount of seed used in Alabama and Texas currently comes from North Dakota and Minnesota. Exhibit 3-11 provides estimates of the percentage of seed coming from each source into individual states of the summer crop market segment.

New Brunswick's share of this seed market is in the range of 2-4 percent of the area's total seed requirements. In Virginia, the state producing the most potatoes in the region, seed unloads statistics indicate that New Brunswick supplies less than 1 percent of the state's requirements.

EXHIBIT 3-11: ESTIMATED PERCENTAGE SHARE OF SUMMER CROP MARKET HELD BY SUPPLYING STATES/PROVINCE

	% Share of market				
Supplier	New Jersey	North Carolina	Delaware Virginia/ Maryland	Alabama/ Louisiana	Texas
Maine	30 - 40	40 - 50	60 - 70	20 - 30	0 - 10
Wisconsin	10 - 20	20 - 30	20 - 25	20 - 30	20 - 30
Minnesota/ North Dakota	0 - 5	10 - 20	0 - 3	40 - 50	50 - 60
Nebraska	0 - 5	0 - 5	0 - 3	0 - 5	20 - 30
Micnigan	10 - 20	10 - 20	0 - 5	0 - 5	--
New Brunswick	0 - 5	0 - 5	0 - 3	0 - 5	-
New York	20 - 30	0 - 5	0 - 5	--	--
Other	0 - 5	0 - 5	0 - 5	0 - 5	0 - 5

Source. DPA estimate.

3.7 Spring Crop U.S.

The "spring crop" states include: Louisiana, and parts of North Carolina, Texas, Alabama and Florida.

3.7.1 Size of Market

The total acreage of potatoes planted in the spring crop market segment has declined steadily over the last four years from a nigh of 58,400 acres in 1978 to

46,900 acres in 1981. Exhibit 3-12 provides a breakdown of spring potato acreage by state from 1976 to 1981. The largest acreage decline has occured in Alabama and significant reductions are also evident in Texas and Louisiana. The size of the spring crop seed market is currently established at 900,000 cwt.

EXHIBIT 3-12: EASTERN U.S. PLANTED ACREAGE OF SPRING-HARVESTED POTATOES, BY STATE, CROP YEARS 1976 - 1981

	Planted Acreage (1000 acres)					
State	1976	1977	1978	1979	1980	1981
Florida Hastings	23	21	23	21	21	22
Louisiana	3	3	3	2	2	2
North Carolina	13	14	13	14	13	14
Texas	7	6	8	8	7	6
Alabama	12	11	11	8	6	4
TOTAL	56	54	57	53	48	47

Source: United States Department of Agriculture

Florida is the largest producer of spring-narvested potatoes followed by North Carolina. These two states make up 75% of the spring crop. A review of the 1981 New Brunswick seed shipment statistics together with the results of discussions with industry participants, indicates that New Brunswick's share of the total spring crop seed market amounts to less than 5% overall and slightly higher in Florida at between 5-10%.

3.7.2 Trends and Issues

Planted acreage, as mentioned previously, has decreased in recent years in the spring crop market segment. As in most other segments, it is not expected that this trend will be reversed in the short to medium term. Industry knowledgeables suggest that the best that can be expected is a stablization of current levels (i.e. approximately 47,000 to 50,000 acres). One reason given for this forecast is that few new people are entering into potato production while those who are involved have become more or less settled with respect to the size and capacity of their individual operations.

The most important trend in the region is toward an increase in Atlantics. This variety has made enormous gains in the segment during the last five years and now constitutes 60 percent of the total production in Hastings County. At one time Sebagos represented 90 percent of Florida acreage with as much as 75 percent of the seed coming from P.E.I. This acreage is now of the order of about 40 percent.

This area produces most of its crop for Chippers - an estimated 60 percent of the total crop is utilized by potato chip plants.

3.7.3 Varietal Mix

For the most part producers in the spring market segment grow potatoes for the chipping market. The following list is an approximate estimate of the seed requirements by variety in thousands of cwt's:

Sebago	250-300
Atlantic	250-300
LaChipper	0- 50
Pungo	0- 50
Superior	150-200
Norgold Russet	50-100
Red Viking	50-100
Other	0- 50

3.7.4 Channels of Distribution

As in the other U.S. markets segments there are primarily three channels through which New Brunswick seed potatoes move into the eastern United States spring crop region including; dealers, brokers and direct to growers. Approximately 70-80% of New Brunswick seed shipments go through U.S. brokers or dealers while 10-20% goes through Canadian brokers and 0-10% are shipped direct to the grower.

Buyers in the spring crop market segment indicate that fifty percent of their purchases are through brokers or dealers and fifty percent are direct. Direct purchases are the preferred channel by growers in this area and many of those who buy direct have maintained long-term personal contact with their seed suppliers.

As with the summer market segment, it is frequent practice for a larger grower to buy seed for a number of small growers in his locality.

3.7.5 Size and Packaging

Growers in this market segment prefer small size seed, most in the "B" size category.

The results of the grower survey showed that 60% of growers in this segment preferred seed packaged in 100 lb jute bags and the remaining 40% prefer bulk shipments. Industry participants in both Florida and North Carolina indicate that more and more growers are becoming equipped to handle bulk shipments and this number will increase.

3.7.6 Experience with N.B. seed

Only 14% of the growers interviewed in this market segment had used New Brunswick seed in the past. Those growers who had purchased New Brunswick seed had favourable impressions. More growers in Florida have used New Brunswick seed than in the other states in this market.

Brokers indicated that their customers have been satisfied with New Brunswick seed. The only negative comment came from North Carolina where it was suggested that the presence of rocks have been a problem in the past. In Florida growers have a better impression of seed from P.E.I. than from New Brunswick.

3.7.7 Competition and Market shares

The shifts in varieties taking place in this market segment are causing some changes in sources of seed. In Florida, for example, a shift away from Sebago towards Atlantic has caused a decline in the share of the

market held by P.E.I.. Wisconsin is North America's largest producer of Atlantic seed and is therefore increasing its market share in this segment. Nebraska and Michigan are also competing for this market altnough less successfully than Wisconsin.

Exhibit 3-13 provides estimates of the percentage of this market held by individual states. Maine, Wisconsin and tne Red River Valley (North Dakota and Minnesota) are tne main competition in this market segment. Michigan, Nebraska and P.E.I. each have market shares in tne 10 percent range.

EXHIBIT 3-13: SPRING U.S. CROP - ESTIMATED MARKET SHARE HELD BY STATE

% Share of Market

Supplier	Florida	North Carolina	Texas	Alabama	Louisiana
Maine	25 - 35	40 - 50	--	20 - 30	35 - 45
Wisconsin	15 - 25	20 - 30	10 - 20	20 - 30	5 - 10
North Dakota/ Minnesota	--	10 - 20	60 - 70	30 - 40	35 - 45
Nebraska	5 - 10	0 - 5	10 - 20	0 - 5	5 - 10
Michigan	0 - 5	10 - 20	--	0 - 5	5 - 10
P.E.I.	10 - 20	0 - 5	--	0 - 3	--
New Brunswick	5 - 10	0 - 5	--	0 - 3	--
Other	0 - 5	0 - 5	--	0 - 5	0 - 5

Source: DPA estimate.

3.8 Home Gardens and Small Commercial Growers

Information by market segment shown above relates to the commercial potato grower (the only sector for which data is kept). There is, an additional market for seed potatoes for the small farm and home gardener in Canada and the U.S. The size of this market is not possible to ascertain with any accuracy. However, it has been reported by New Brunswick growers as an increasing market. Several chain-type garden outlets, co-ops and "feed and seed" stores buy seed potatoes in truck lots. The most popular varieties identified during the study were Kennebecs and Red Pontiacs (in the southern U.S.).

Acreages planted in this segment could amount to between five and ten percent of the commercial potato acreages, suggesting an additional market for seed potatoes of 300 - 600 thousand cwt. in total. This is not a large market, particularly given the wide geographical spread, but it is one where there are some opportunities, particularly related to the home gardener looking for a small lot of seed. At the present time, common practice is to open a large bag from which the customer selects as many potatoes as he needs.

Although this study could not review this market in depth, several respondents suggested that there is an opportunity in this market for high quality consumer-oriented seed potato packaging. Seed in a small (10 - 25 lb), attractive package with point-of purchase displays describing the best seed use, growing season, and planting instructions, could be priced at a high premium. Sales could be made through existing contacts as well as under contract to larger chains, such as K-Mart or Dominion, who run garden centres during the spring and early summer.

3.9 Market Potential

In Exhibit 3-14, an estimate is provided of New Brunswick's potential share of each market segment by 1988, under three scenarios: low, medium and high.

EXHIBIT 3-14: POTENTIAL SEED POTATO SALES BY MARKET SEGMENT BY 1988

	Seed Utilization (000 cwt)	N.B. Sales (1981) (000 cwt)	Potential Low	Med.	High
Quebec	800	256[1]	180	200	280
Ontario	800	80[1]	64	80	120
Atlantic	100	6[1]	8	10	15
Fall U.S.	3,500	120[2]	120	210	240
Summer U.S.	900	30[2]	40	63	72
Spring U.S.	900	50[2]	40	63	72
Small farm & home	300 - 600	[3]	--	25	50
TOTAL	7,300 - 7,600	542	452	651	849

1) average 1979-81
2) DPA estimate
3) included in the market segment sales

3.9.1 High estimates

There is potential for growth in New Brunswick's share of all markets. The greatest opportunities probably lie in the U.S. where, even though New Brunswick is relatively unknown, the province has 3% of the market. With promotion and an empnasis on quality, there is an

opportunity to build an image and increase market share by offering a "new" alternative to most growers. The "high" scenario reflects a substantial capture rate for the opportunities which now exist, including:

- increasing and capturing many of the Quebec and Ontario growers planting certified seed as opposed to held-over and uncertified
- obtaining some contracts with large grower groups in Ontario
- increasing the volume of sales of Shepody seed to displace seed varieties now produced in Ontario and Quebec
- increasing sales of Russet Burbank into Maine
- providing more nematode resistant seed into the Long Island market
- substantially increasing awareness of, and demand for, New Brunswick seed in all U.S. market segments
- obtaining a substantial portion of the small farm and garden market.

Under this scenario, New Brunswick would increase its seed potato marketings over the five-year period by about 40%

3.9.2 Medium estimates

These estimates reflect, more or less, a continuation of current practices, with efforts focussed on holding on to existing market shares in Canada and increasing market share in the U.S. This strategy would generate slow growth (10% over the next 5 years) approximately equivalent to past increases.

3.9.3 Low estimates

This scenario reflects what could happen in the absence of the industry taking specific action to reverse negative impacts such as a declining image and loss of market share in Canada, an inevitable increase in seed production in Quebec and Ontario, and U.S. retaliation to Canadian exports. The latter is to a certain extent beyond Canada's control, but there are efforts which could be taken to minimize any such retaliation, as will be outlined in the market development strategy (Chapter 5). Under this scenario, New Brunswick would see a decline in its total market by about 25% over the five years.

4.0 GENERAL ASSESSMENT OF NEW BRUNSWICK SEED POTATO QUALITY AND MARKETING EFFORTS

4.1 Disease Control and Certification

New Brunswick seed is produced and controlled under the conditions and terms of Canada's Seed Act. Canada has a single certification program for the whole country, unlike the situation in the United States, where programs are run by individual states.

In addition to these conditions, the New Brunswick Potato Disease Eradication Act has been implemented to further improve the quality of potatoes and reduce the spread of disease. This act imposes several conditions; among the most important being the need for potato growers to plant certified (or higher) seed and perform prescribed procedures for control of disease and insects.

In comparison to the major growing areas of the United States, New Brunswick standards are equivalent or higher in most cases. In general, states tend to follow the U.S. Seed Potato Guide, although there are variations by state. A summary of the standards for some of the growing areas which are competitors of New Brunswick is provided in Exhibit 4-1. A copy of the U.S. Seed Potato Guide standards is provided in Appendix 3.

All states compared in this table test seed in growing trials in Florida. The Florida test results are an important component of U.S. seed programs and American buyers (and some Canadians as well) are accustomed to specifying Florida test levels when ordering seed. In most seed-producing areas, certain standards must be achieved or surpassed on the Florida test as a condition of certification.

EXHIBIT 4-1 COMPARISON OF CERTIFICATION STANDARDS FOR SEED PRODUCING AREAS
(Foundation level seed unless otherwise indicated)

	Maine		Michigan		New York		North Dakota		Wisconsin		Canada	
	Field[1]	Flo Test	Field[1]	Flo[2] Test	Field[1]	Flo Test	Field[1]	Flo Test	Field[1]	Flo Test	Field[1]	Flo[4] Test
Tolerances												
Spindle Tuber	.333	.333	.33		.333	.333	.333		.33	.3333	.333	
Leaf Roll	.333	.333	.33		.333	.333	.333[3]	.333	.33	.3333	.333	
Mosaic	.333	.333	.3333		.333	.333	.333	.333	.33	.3333	.333	
Total Virus	.333	.333	.3333		.333	.333	.333	.333	.33	.3333	.333	
Ring Rot	.333	.333	.33		.33		.333		.333	.33	.33	
Mixture	.3333		.33		.33	.333			.333	.33	.33	
No. of Field Inspections	2		3		2		3		2		2	
No. of Bin Inspections			1		1		1		1			
Other	No ring rot in current season.		No ring rot in past two years.		No ring rot in current season.				No ring rot in past two years.		No ring rot during last three years.	

1) On Second Inspection
2) Not Available
3) Mild - .01
4) In Canada, Florida testing is a requirement for foundation level seed, but there are no standards to be met in order to achieve certification.

The fact that this is not a condition of certification in Canada detracts from the otherwise very high standards New Brunswick has set and its image as a leader in quality seed production.

4.2 Quality and Appearance

There were during the course of the study many comments and reservations about the grading, packing and appearance of New Brunswick seed which affect the image of the seed. In a number of cases, the presence of an overly high incidence of rocks was claimed. Other respondents reported fusarium rot from dehydration (probably during shipping) and receiving loads which appeared to have been packed several weeks before delivery. While none of these factors are particularly serious and do not detract from the quality of the seed, they do, nevertheless, create a negative first impressions on the receiving grower reflect badly on a product which otherwise meets high standards.

In the United States, there also appears to be an unfortunate association of N.B. seed with Maine seed (because of geographical proximity) - Maine seed was frequently mentioned as being of lower quality than seed from competitive (U.S.) growing areas.

Several New Brunswick shippers expressed concern about damage during transportation and handling. It was felt that there should be a means of follow-up on a shipment to ensure the seed arrived in good condition. Usually, there is no way of knowing whether the receiving grower is satisfied unless there is a settlement on the load. However, what is not known is whether there are any less serious problems, but problems of a nature such that New Brunswick may be blamed for a problem (totally without the knowledge of the shipper) causing lost sales in future years.

4.3 Tagging and Grading

Each state has a different approach to tagging and identifying its seed and none is consistent with the practice in Canada. In some cases, tagging denotes the grade or class of seed; in others, tagging is based on size.

In most states, tag colour is determined by grading standards not by class of seed. A blue tag generally denotes potatoes which meet the "U.S. Standards for Grades of Seed Potatoes" (see Appendix C), which outlines limits and tolerances for damage, and disease levels. The U.S. grading standards allow a very wide variation in size - No. 1's are from 1 1/2 inches to 3 1/4 inches. A number of states have introduced additional size classifications. For example, Maine has four sizes: Regular, Small, B, and Special. Maine tag colour is governed by both size and class:

gold	foundation regular or special
blue	certified regular or special
white	certified or foundation small
green	certified or foundation

In Canada, tagging denotes class rather than grade or size. Foundation seed is tagged with a red tag and certified seed with a blue tag. Since generally in the U.S., anything other than a blue tag denotes inferior quality, the red foundation tag may be misleading receivers into thinking they have received sub-standard seed, when in fact the opposite is the case.

4.4 Marketing

Marketing practices for seed have been of two types, regular communication with brokers and receiver/shippers; and personal contacts with growers. The latter have been particularly effective, and a long-established practice in Quebec and between growers in Maine. To a lesser extent, Ontario and some U.S. contacts have also developed in this fashion.

Nevertheless, New Brunswick has lost a considerable amount of market share to P.E.I. in Quebec and Ontario in recent years. While the province is holding on to its long established market, it does not appear to be capturing any of the substantial new market which has recently opened up.

The two crop years 1980 and 1981, saw a significant increase in demand for Eastern seed. In each of those years, local seed production was down and more growers appeared to be planting certified seed to ensure a good crop. In total, eastern seed purchases increased by more than 100 thousand cwt. per year. That market increase alone is greater than New Brunswick's <u>total</u> seed shipments to Ontario. Virtually 100% of this new market went to P.E.I. As reported in an earlier chapter, in both these markets, P.E.I. is seen as having better quality seed, New Brunswick has the added disadvantage of the recent publicity over ring-rot in Quebec.

With this increase in P.E.I.'s market share, New Brunswick will have a particularly difficult time holding its market when Ontario and Quebec are ultimately able to bring their seed production back to pre-1980 levels.

In the U.S., the recent legislation requiring an end use certificate for Canadian seed has been the direct result of Canadian potatoes with seed tags ending up on the tablestock market in order to benefit from lower duty. Most contacts have suggested that the legislation has eliminated this practice. At the same time, however, it may have taken away some of New Brunswick's market, particularly among growers who do not want to bother with the extra paperwork, buyers who were reselling seed in smaller lots to gardeners or small growers and who have no way of knowing if the potatoes actually ended up being used as seed, and growers who felt the practice had hurt the domestic U.S. tablestock market. For the short term advantage of perhaps 200 - 300 cwt. of seed potatoes, this practice may have done some long term harm to New Brunswick's image as a producer of high quality seed, although it was not mentioned as an issue in any of the fifty interviews conducted with U.S. growers.

There have been few attempts made to undertake market development on an industry wide basis or pursue other marketing methods such as advertising, promotion or market research. Some marketing efforts have been taken in conjunction with offshore export development which are also available for use in a North American focussed seed program. A sound film, describing New Brunswick's seed program is available, and the federal and provincial governments have been jointly developing a high quality booklet on the seed program.

In the U.S., it is common practice for growing areas and seed companies to advertise in trade publications such as Spudman, Spudletter and The Grower. For example, the January 1983 edition of Spudman included

thirty advertisements (including state advertisements from Montana, Washington, Wisconsin, Minnesota, Colorado, North Dakota and Oregon, as well as one from British Columbia).

In addition to trade publications, states use their seed lists to provide information about the seed program and the standards, inspection and grading procedures. Frequently, information about the major varieties grown (maturity, best market use, disease resistance and technical comments) are given, as are lists of brokers and dealers (shippers). The seed books serve an advertising function as well as simply listing the growers. Potential buyers can not only find out who grows a particular variety, but also how to make contact, and know what standards are in place.

5.0 MARKET DEVELOPMENT STRATEGY

5.1 Summary of Strengths and Weaknesses

In developing a marketing strategy, New Brunswick has a number of key strengths on which to build, as well several weaknesses to be overcome. The key strengths and weaknesses identified in the study are summarized below.

5.1.1 Strengths of N.B. Seed

Disease Standards - The standards used in the certification program are the highest in the industry. Three other related factors enhance the quality of the product, and should be built upon. First is the fact that the certification program is a national one demonstrating both national level as well as provincial level commitment to quality seed production. It also means that New Brunswick standards are the same as those for P.E.I., a point which can be utilized to counter arguments about N.B. seed being of lower quality than P.E.I. seed.

Second is the Potato Disease Eradication Act, providing further disease control measures. Thirdly, there is the province's participation in Florida testing.

Technical Support - The province is the home for most of Canada's research efforts in potatoes and this provides enormous technical support to and encourages research and high quality standards among the province's potato growers. Many of the technical personnel participate in international research projects and are recognized authorities among the scientific and potato research community.

Bon Accord Seed Farm - The Bon Accord farm is a rather unique program in the industry and it is important to the marketing efforts in two ways: it is a basic seed stock production centre that potato people are interested in visiting, and its existence demonstrates a commitment to a high quality seed program.

Established Market Channels - New Brunswick shippers have a long history of shipments to the United States Canada and well-established contacts with brokers and dealers. Expanding U.S. and Canadian markets does not present the same type of problems as would be evident, for example, in establishing a new export market. There may be some room for expanding the numbers of contacts and making New Brunswick shippers better known to U S. brokers, but the marketing system in general functions well for New Brunswick.

Good Reputation In U.S. - While in the U.S., New Brunswick seed is not widely known, the overall impression of New Brunswick seed, by those growers who have used it, is favourable in all market segments although there are some indications that grading and packaging needs to be improved to be consistent with the quality image. In the U.S. market, New Brunswick seed is generally more highly regarded than Maine even though Maine is the major competitor in all of the U.S. segments.

Varieties - New Brunswick has a leading edge on some of the emerging high potential varieties - notably Hudson and Shepody. These should continue to be multiplied to capitalize on the market opportunities available.

Proximity to Markets - New Brunswick is closer to the Canadian and U.S. markets than P.E.I. giving both a cost advantage (of between 75 cents and $1 in the U.S. and 35 - 50 cents in Canada) and the advantage of less opportunity for damage to occur en route. Also, the closeness of the U.S. border crossing points means that New Brunswick shippers can personally intervene in any border crossing problems to sort out paper-work, authorizations, etc.

Personal Contacts - A major advantage for New Brunswick in the Quebec and Maine markets is the proximity and ability to visit and establisn personal contact. Many New Brunswick shippers and growers are French speaking, giving a decided advantage in Quebec, and effectively the only out-of-province competition for most Quebec seed markets. Much of the market development has taken place through personal contacts establsined by individuals, as opposed to any industry wide attempts to increase these market efforts.

Movement Toward Higher Quality Seed - With costs of production increasing continuously, growers are more concious of the need to plant reliable seed to maximize changes of a crop and improve yield. The proportion of certified seed planted in Quebec and Ontario for example has increased considerably over the last two years.

5.1.2 Weaknesses

Lack of Florida Test as Condition of Certification - All major seed producing states in the U.S. require seed potatoes to pass certain minimum standards on post-harvest Florida tests in addition to field

standards. Canada does not have this requirement. Without this control, Canadian seed growers are able to ship seed with poor Florida test results as certified seed and the purchaser has no assurance that any post-harvest standards are being met.

Buy American - A major constraint on New Brunswick's ability to penetrate the market will be the increased nationalism of U.S. farmers and the feeling that their loyalty should be to support their fellow U.S. growers. It can be expected, particularly if prices stay low, that Maine will increase its lobbying efforts against Canadian potatoes. To a lesser extent, but of potentially greater impact in the future will be similar reactions from Canadian growers to support seed grown in their own provinces rather than buy outside.

End Use Certificate - The U.S. has recently introduced the end use certificate which must be signed by seed users to certify that the seed has been planted. This extra paper burden on the U.S. farmers may be enough to turn some of them away from Canadian seed.

Not well known in U.S. - Although the responses from U.S. growers about New Brunswick seed were favourable from those who used the seed, it is clear that there is a lack of knowledge about the seed program and about New Brunswick in general. New Brunswick was not the preferred seed source in any case interviewed, and growers contacted in the survey who had used New Brunswick seed got it because the seed may not have been available anywhere else.

Inconsistent Quality - There have been reported incidents of lower quality potatoes arriving at their destination. The most commonly reported problem was

with rocks, although others were mentioned such as fusarium rot. In none of the cases, however, were the reported problems significant enough to discourage future use of New Brunswick seed.

Image in Canada is lower than P.E.I.'s - In Canada, New Brunswick seed is perceived as being of poorer quality than P.E.I. seed in both Quebec and Ontario. The reasons for the poorer image seem to include: recent publicity over ring rot in Quebec; a poorer quality image for New Brunswick tablestock which transfers to seed as well; the generally more favourable appearance of P.E.I. seed (absence of rocks, fewer bruises and the red colour of the seed).

5.2 Marketing Strategy

While the potential market for New Brunswick seed potatoes is a large one, it is shrinking. It is also one which is characterized by tough competition (much of it coming from government-level or government-sponsored organizations), a multitude of varieties which are continuously changing and some well established contacts and channels of communication and distribution.

In the United States, New Brunswick seed has the disadvantages of not being well known in the market place and facing a considerable movement to "buy American".

In Ontario, the U.S. and P.E.I. have been increasing its market share at New Brunswick's expense and both U.S. and P.E.I. shippers appear to be attacking this market much more aggresively than New Brunswick shippers.

At the same time, however, there are opportunities for New Brunswick to build on its real strengths and expand its market penetration and capitalize on a number of market characteristics.

The key relevant strengths of New Brunswick's seed production and marketing system include:

- certification standards which are the highest in the industry;
- part of a national certification program;
- one of only two or three sources for some seed varieties;
- experienced shippers with well established broker contacts.

One of the most significant characteristics of the market is the purchasing grower's preference for personal contact with the grower of the seed. In every market segment this was stressed as a key factor, and personal contact has been one of the most significant elements in building and holding the market which New Brunswick now enjoys. Similar comments were made about personal contacts between, for example, Long Island tablestock growers and Maine seed growers, Ontario producers and P.E.I. seed growers, and so on.

In developing a marketing strategy for New Brunswick seed, the strengths of the product and the importance of personal contacts between buyer and producer will be key factors.

The strategy should be designed to meet three key objectives.

1) Create a unique image of high quality for New Brunswick seed potatoes.

2) Double eastern U.S. market share over next 5 years.

3) Increase Ontario sales by 50% over next 5 years.

Although these objectives are optimistic, they are achievable given a systematic approach to the market as it now exists. The market is subject to considerable fluctuation from year to year, thus it is important that these objectives be reviewed annually to ensure that they continue to reflect realistic expectations.

The following recommendations outline the activities to be undertaken in meeting the strategic objectives:

STRATEGIC OBJECTIVE #1: Create a New Image of High Quality for New Brunswick Seed Potatoes

Marketing efforts should focus on the quality of the seed produced in the province, and the fact that New Brunswick's standards are the highest in the industry. Packaging, grading and transportation should be conducted at a level consistent with the quality of the product. New Brunswick should become synonymous with quality seed, reliability and "no surprises". A common identity program and packaging of product and an image around this identity are needed to obtain new sales. At the same time, it is important that the identity

program not replace any efforts or contacts currently in place. Therefore, it is recommended that:

1) The Shipper's Association establish a voluntary program to promote New Brunswick seed potatoes as a high quality, premium price product. The program would have the following features:

   - establishment of a corporate identity (which we will call the "Saint John Valley Seed Company);
   - a common brand name or trademark;
   - a set of standards for packaging and grading consistent with the quality image, including mandatory Florida test results;
   - a guarantee of quality and offer to replace any seed not up to standard.

<u>STRATEGIC OBJECTIVE #2: Double U.S. Market Share Over Next Five Years</u>

It is recommended that:

2) The Shippers' Association obtain financial support under the PEMD (food) program to open a "U.S. sales office" as the focus for promotion of the brand and increasing market share.

3) The U.S. office provide market support, market intelligence and strong after-market follow-up with growers. The office would represent the seed brand or trade-name in order not to focus any undue attention on or create a "Canadian" image for the product.

4) The U.S. office would find opportunities for at least one large contract per year with co-ops or grower associations which would involve several shippers working jointly.

5) The introduction of the new brand and quality seed program be supported by promotional material in the form of an insert to wide circulation U.S. publications such as Spudman and The Grower. (This advertising should provide factual information and photographs about the seed program, the measures used to ensure quality through certification, and testimonials to the satisfactory results which U.S. users have obtained from the seed. The advertising will need to be carefully presented so as not to overstate the "foreign" aspect of the seed, but rather to focus on the fact that New Brunswick seed is being used extensively in the U.S. and with good results.)

6) The U.S. office maintain regular contact with brokers and other middlemen in the U.S. to ensure that they are familiar with New Brunswick's system and to ensure that they understand that the program and/or the advertising campaign is not intended in any way to compete with them, and that all promotions will reinforce the use of established channels.

7) A regular bi-monthly newsletter or bulletin to the brokers be developed by the U.S. office to keep a regular visibility of the New Brunswick brand name, and to provide useful information on available varieties, any changes in the membership of the group, or other news of interest.

8) Whenever possible, the seed company attempt to identify the buyers of New Brunswick seed and make regular follow-up calls (or visits where practical) to identify and resolve any problems, determine whether the buyers are satisfied and receive suggestions for improvement.

9) Develop and put on a seminar for Canadian consulate agriculture representatives in each U.S. market area to acquaint them with New Brunswick's seed and the new marketing thrusts, so that market opportunities could be identified through these representatives.

10) Consideration should be given to adopting a different color scheme for seed tags, to make Canada's tags consistent with practices in the U.S. Alternatively, the Shippers' Association could develop tags for its own program to be affixed along with federal inspection tags.

11) In order to minimize the paper burden to the U.S. buyer of billing on an "end-use certificate", prepare an explanatory document which could be sent with each load of seed explaining the rules for the certificate and soliciting the cooperation of the buyer in filling in the required information.

12) The U.S. office prepare an annual review of the market to the Potato Agency, the Seed Growers' Association and the Shippers' Association in the form of planning workshops. The review should cover:

- new varieties and trends;
- a review of the province's market share by segment and forecast for the future;
- problems which have occurred with N.B. seed, and remedial measures which need to be taken.

13) Undertake an immediate effort to establish contacts on Long Island for Hudson seed. Personal contacts should be established now to ensure that the new market is not lost once other growing areas start producing the seed.

14) The federal and provincial departments of agriculture support the U.S. market efforts by providing travel funds and staff time for professional contact between New Brunswick agriculture representatives and their state counterparts. Staff should actively encourage the development of test plots, sharing technical information and organization of visits or technical meetings to the province for key U.S. agriculture representatives.

15) Use the PEMD program to arrange, at least once per year, visits to New Brunswick by influential brokers or large buyers or cooperative seed purchasing groups.

16) Create new markets for Shepody seed by active promotion to U.S. processors as a superior variety for certain applications.

17) The certification book produced by the province should be expanded in future years to give additional information, such as, a description of the certification program, grading practices, and lists of licensed shippers.

18) Undertake a more thorough feasibility study of the U.S. (and Canadian) markets for small seed packages for the home and small farm market to determine the potential for increased sales to this segment.

STRATEGIC OBJECTIVE #3: Increase Sales in Ontario by 50 Percent Over Next Five Years

(See Also Recommendations 17 and 18)

In Ontario, a major potential market is the 15% of growers who do not plant certified seed at the present time. Persuading even 25% of these growers to plant certified seed from New Brunswick to obtain better yields, less disease etc. would result in a 4-5 percentage point increase in market share. Therefore, it is recommended that:

19) **A joint effort be undertaken between the shippers and seed growers to personally visit the province and conduct educational sessions to encourage increased use of certified seed.**

Ontario has several large growers associations which work together primarily to establish prices for their potatoes and pool resources such as storage. These grower groups should be approached to obtain a large contract involving all its members. The contract should be divided between the participating growers and filled with the highest quality product. A successful venture like this could be a most effective marketing tool for securing similar contracts in future years. It is recommended that:

20) **A concentrated effort be made to persuade one of the large Ontario grower groups which is not now an extensive N.B. seed user to negotiate collectively obtain a seed contract on behalf of its member growers.**

21) Promotional material specifically tailored to the Canadian market be developed and distributed through co-ops, buying space in local co-op or association newsletters and magazines and agricultural shows, fairs, etc. (This material should, in contract to the U.S. advertising, emphasize the Canadian aspect of the program and support of the Canadian agricultural industry.)

6.0 IMPLEMENTATION PLAN

This chapter summarizes in point form the activities which should be carried out, in order of priority, by the various agencies and associations in implementing the strategy for increased market penetration.

Shippers' Association	Corresponding Recommendation #
1. Establish by the end of 1983 a working group to design the quality seed program.	1
2. Make visits in 1983 to the Long Island market to promote Hudson seed and identify buyers.	3
3. Make a visit no later than February 1984 to 4 or 5 large producer associations in in Ontario to determine possibility of a contract for large sale.	20
4. Set up the "Saint John Valley Seed Company" by May 1984.	1
5. Receive at least one incoming mission of buyers and/or brokers per year and arrange to have them meet members and growers and see the components of the quality seed program.	15
6. Work with seed growers to develop by the end of 1984 educational sessions to encourage more use of certified seed in Ontario.	19
7. Design a one-page description of the end-use certificate and have copies made for members to use with their shipments.	11
8. Work with Agriculture Canada to explore possibilities of a consistent seed tag system.	10
9. Develop seminars for Canadian consulate agriculture representatives.	9

Seed Growers' Association	Corresponding Recommendation #
1. Participate in visit this year to Long Island market to determine special needs for nematode resistant seed and how new Brunswick could take advantage.	13
2. Work with Snippers' Association to develop by the end of 1984 educational sessions for Ontario designed to encourage more use of certified seed.	19
3. Participate with Snippers' Association on incoming buyer/broker missions.	15
4. Jointly, with Snippers' Association, participate in seminars for Canadian consultate agricultural representatives.	9

Saint John Valley Seed Company	Corresponding Recommendation #
1. Design logo, identify plan for the Corporation by September 1984.	1
2. Contact brokers in U.S. and Canada to explain new approach and meaning of the program by the end of 1984.	6
3. Seek PEMD assistance for establishment of of a U.S. Sales Office.	2
4. Set up U.S. office by end of 1985.	2
5. Obtain at least one new large contract in Ontario for the Shippers' Association each year.	20
6. Develop promotional material for Canadian markets by early 1985.	21
7. Prepare annual market overviews to the members.	12

U.S. Sales Office	Corresponding Recommendation #
1. Visit all major U.S. brokers at least once per year.	6
2. Make regular calls to at least 5 U.S. growers using New Brunswick seed each month.	8
3. Find at least one major new market opportunity annually.	4
4. Work with head office to design advertising campaign for implementation in 1985.	5
5. Actively promote Shepody as a processing variety to major U.S. processors.	16
6. Develop by mid 1985 a bi-monthly newsletter for U.S. brokers/buyers.	7
7. Prepare an annual assessment of the U.S. market for the Board of the Corporation and others.	12

New Brunswick Department of Agriculture	Corresponding Recommendation #
1. Work closely with the Shippers' Association to set up the Saint John Valley Seed Company.	1
2. Provide financial assistance in development of brochures, advertising material, etc.	5,7,9,11,21
3. Develop a plan for technical staff to increase contact with U.S. counterparts.	14
4. Participate with the Snippers' Association and/or seed company in marketing and promotional activities and incoming missions.	2,13,15,16
5. Revise "Seed Book" to be more promotionally-oriented.	17
6. Jointly fund a feasibility study of the market for small farms and home gardens.	18

Agriculture Canada	Corresponding Recommendation #
1. Provide technical assistance and advice in establishment of seed company.	1
2. Assist in preparation of PEMD applications.	2,15
3. Develop a plan for technical staff to increase contacts with U.S. counterparts.	14
4. Work with seed company representatives to develop information on markets for future planning.	12
5. Jointly fund a feasibility study of the market for small farms and home gardens.	18
6. Investigate the possibility of standardizing the colors of seed tags.	10
7. Make Florida testing a condition of certification.	1

APPENDIX A

GROWER SURVEY

APPENDIX A GROWER SURVEY

A.1 Introduction

In an effort to collect specific data on the various market segments identified previously in this study, we have completed a telephone survey of potato growers in both Canada and the United States. The survey was designed to collect information related to:

- important features growers consider in selecting seed potatoes
- size and packaging preferences
- methods used to obtain seed
- seed growing areas preferred and current sources of supply
- frequency of purchase and impressions of New Brunswick seed, P.E.I. seed and/or Canadian seed in general
- acreage grown and varietal preferences
- markets the growers are selling to

This section of the report outlines the methodology used and discusses the results of the grower survey.

A.2 Methodology

A total of 150 grower interviews were conducted including 100 in Canada and 50 in the United States. The sample can be broken down by state and province as follows (Exhibit A-1):

EXHIBIT A-1: INTERVIEW SAMPLE BY STATE/PROVINCE

STATE/PROVINCE	No. OF INTERVIEWS	
United States-		
Alabama	5	
Deleware	1	
Florida	10	
Louisiana	1	
Maryland	1	
New Jersey	7	
New York	6	
North Carolina	6	
Pennsylvania	6	
Texas	1	
Virginia	6	50
Canada-		
Quebec	50	
Ontario	42	
Nova Scotia	8	100
TOTAL		150

The sample breakdown is approximately proportionate to the number of growers in each state or province. For the Canadian interviews three sources of grower names were used. Although we had been assured that there would be no problems obtaining a sample of Ontario growers from the Ontario Potato Agency, this request

was turned down by the board. We therefore resorted to a sample chosen randomly from a list of subscribers to Harry Fraser's Potato Newsletter and from the "Blue Book". Nova Scotia names were selected randomly from a complete list of growers provided by the Nova Scotia Department of Agriculture. Growers in Quebec were selected from an Agriculture Québec publication "Répertoire de l'industrie de la pomme de terre du Québec".

The United States grower names were initially provided by the U.S. National Potato Council. The Council forwarded a list of 175 grower names selected randomly from their membership list. Once the interview process had started it became apparent that the Potato Council list was of little use since many of the growers had discontinued potato production, retired from farming or were inaccessible for a number of reasons. It was necessary, therefore, to supplement the list with grower names selected from the subscription list for Fraser's Potato Newsletter, and the "Blue Book".

A preliminary questionnaire design was reviewed with the technical sub-committee and circulated to all committee members. Revisions were then made and a pre-test conducted with three Canadian and three U.S. growers. At this point minor adjustments were made to the format and interviewer instructions to put the questionnaire in its final form (a copy of the questionnaire has been included at the end of this Appendix.)

For the most part, interviews were conducted in the evening from 6 to 9 p.m. although a number of interviews were completed in the early morning and between 12:00 and 2:00 in the growing area.

Once the interviews were completed, the questionnaires were coded for computer analysis and tabulation of the results.

A1.3 Results of Growers' Survey

This section summarizes the results of the survey of growers in the United States and Canada and thus provides a description of several of the major characteristics of the market in each country. The section discusses the results for each country in total, and includes comments on each market segment or smaller geographic area where relevent to the item under review.

A1.3.1 United States

A total of 46 valid responses were obtained from the survey. These included 21 responses from the "Spring" growing areas (Florida, Alabama, Texas, Louisiana, and North Carolina) and 25 responses from the "summer" growing area (Virginia, Maryland, Delaware, New Jersey, New York and Pennsylvania).

A1.3.1.1 Factors Influencing Purchases

The factor most frequently cited as the most important was "quality". This was cited in 87% of the cases. The most frequently mentioned factor as second most important was "performance" (36% of the cases). Also frequently mentioned under this heading were "price", "size", and "ability to communicate with the supplier", each being mentioned more than 10% of the time.

For all the factors included, the following percentage of respondents considered them "very important"

appearance	37% of respondents
quality	96% of respondents
price	35% of respondents
past performance	85% of respondents
size	57% of respondents
packaging	13% of respondents
area	54% of respondents
communications	67% of respondents

Other important factors mentioned, unprompted, included "Florida test results" and "transportation". There was little variation by market segment.

A1.3.1.2 Information Sources

The percentage of respondents considering various possible information sources as "very important" were:

Ag. reps	15% of respondents
salesmen	25% of respondents
magazines/journals	30% of respondents
newsletters	18% of respondents
brokers	41% of respondents

Again, there was no significant variation by market segment.

A1.3.1.3 Size and Packaging

Ninety-one percent of all respondents had a preference for a particular size of seed. Of these, "B size" was the most frequently given (47% of cases). Many size

configurations were mentioned only once or twice. Two sizes were mentioned five or more times:

1 1/2 - 10 oz, and
1 1/4 - 3 oz

The main reasons given for size preferences were that the named sizes fit the equipment best or cut better than other sizes.

Packaging preferences were as follows:

Bulk	49%
100lb jute	38%
50lb paper	13%

There was some variation by market segment in that the spring areas preferred all 100 lb or bulk, while the summer areas expressed an approximately even preference for 100 lb and 50 lb packaging.

A1.3.1.4 Channels of Distribution

Growers expressed a decided inclination to work directly through seed growers in buying seed.

- 38% made direct purchases
- 27% used some combination of direct purchases and broker and
- 31% used brokers/dealers exclusively.

There were no differences in practices by segment.

A1.3.1.5 Seed Source Preference

Seventy-six percent of growers (somewhat higher for the summer regions) indicated that they preferred to use seed from a particular growing area.

NO GROWER MENTIONED CANADA AS A PREFERRED LOCATION.

The most commonly cited areas are shown below (as there was considerable variation by segment, the segment breakdowns are also shown):

AREA	TOTAL	SUMMER	SPRING
Maine	32%	39%	25%
Wisconsin	24%	39%	6%
North Dakota	18%		31%
Minnesota	9%		19%

(It is interesting to note that although 6 New York interviews were included, only 2 respondents indicated a preference for New York seed).

Of importance to New Brunswick are the reasons given for specifying a particular area: 50% gave "less disease" as the main reason for using seed from a particular area, and 26% gave "better growing conditions".

A1.3.1.6 Experience with Canadian Seed

There were 46% of the respondents who had used Canadian seed during the last three years. There was no significant difference by segment.

Of these, 6 or 13% of the total were regular N.S. seed users. (5 in summer areas, 1 in spring). The impressions of all 6 were positive (5 very good, 1 good).

There were 8 regular P.E.I. seed users (17% of the total). Their comments about P.E.I. seed were similar to those about New Brunswick (5 very good or best ever, 2 good). There were two negative comments: "quality is dropping" and "transportation is too high".

A1.3.1.7 Varieties

The primary varieties grown varied considerably by market segment:

VARIETY	TOTAL	SUMMER	SPRING
Superior	35%	65%	--
Katandin	15%	30%	--
Atlantic	13%		25%
La Rouge	13%		25%
Sebago			15%
Pungo			15%

Secondary varieties cited most frequently included:

Superior (36%) and Atlantics (13%)

Planned varieties for 1983 were virtually identical in all cases.

(Note, that while it was not asked on this questionnaire, the broker interviews which follow tend to indicate a requirement for foundation seed in the north, but only certified in the southern segment).

A1.3.1.8 Farm Size

There was a wide range of sizes as indicated below:

ACRES	TOTAL	SUMMER	SPRING
0 50	2%	5%	--
51 - 100	8%	16%	5%
101 - 200	20%	37%	10%
201+	70%	42%	85%

Differences by size were not noticeable for most responses. However, in all cases, it was the largest farms which indicated Atlantics as their primary variety planted. Only Superiors were mentioned as a primary variety more frequently than Atlantics for this size group.

A1.3.1.9 End Users

Sixty percent of the respondents produced more than 50% of their crop for tablestock (57 were in excess of 75% for tablestock). Twenty-four percent grow more than half their crop for chippers. Only one grower produced seed (between 26 and 50% of his acreage).

A1.3.2 Ontario and Nova Scotia

A total of 48 valid responses were obtained from the Canadian questionnaire. These include 40 in Ontario and 8 in Nova Scotia.

A1.3.2.1 Factors Influencing Purchases

Responses were very similar to those in the U.S. survey, with "quality" being given as the most important factor in 67% of the cases, and "performance" the most frequently mentioned secondary factor (mentioned by 49%). Communication, price and appearance were also mentioned as important factors.

The percentage of respondents rating various factors as "very important" were:

appearance	48%
quality	92%
price	27%
performance	77%
size	46%
packaging	8%
area	45%
communication	72%

Other factors mentioned were "Florida test results" (by 5% of respondents) and the ability to visit the grower/shipper (2 mentions).

A1.3.2.2 Information Sources

Respondents considering various information sources as "very important" in making their buying decisions were:

ag. reps	25%
brokers	42%
salesmen	4%
magazine/journal	17%
newsletter	40%

A1.3.2.3 Size and Packaging

Responses were similar to those in the U.S.: 96% stated they had a preference for a particular size of seed. The most frequently mentioned size was "B" (41% of responses).

Three other sizes received several mentions although not as many:

1.5 - 8oz	17%
1.5 - 10oz	11%
1.5 - 3oz	11%

For growers who specified a particular seed size, the reasons given for the preferences were: "fits seed cutter" (42%); "better yield" (14%) and "more manageable" (14%).

Packaging preferences were similar to those in the U.S., except that the 75lb bag was used instead of the 100lb:

bulk	58%
75 lb	33%
50 lb	6%

A1.3.2.4 Channels of Distribution

Direct purchases remained the most common channel for acquiring seed:

direct	35%
broker & direct	21%
brokers only	29%

A1.3.2.5 Growing Area Preference

Fewer growers in Ontario than in the U.S. indicate a preference for seed from a particular area. Two-thirds of the respondents stated a preference.

The areas mentioned included:

P.E.I.	45%
N.B.	13%
Ontario	26%
Minnesota	7%

The main reason given for preferring a particular area were "good experience" (46%) and "know the source/talk to the grower" (27%).

Sixty-three percent of the growers have used N.B. seed in the past three years. Of these, 60% stated they were regular N.B. seed users.

Opinions were generally favourable:

"Good"	75%
"Poor"	7%
"Better than P.E.I."	3% (1 response)
"Easier to get bulk"	3% (1 response)

Eighty-eight percent of growers had used P.E.I. seed in the last three years. Of these, 86% were regular P.E.I. seed users. This suggests more "loyalty" to P.E.I. seed than to N.B. seed.

However, opinions were not as favourable in the case of P.E.I. seed:

"satisfied"	61%
"variable quality"	19%
"dissatisfied"	28%

A1.3.2.6 Varieties

Primary varieties normally grown were: Kennebec (46%); Superior (23%); Norchip (15%). (Norchip were not mentioned as a primary variety in Nova Scotia).

Secondary varieties included: Superior (41%); Russet Burbank (14%); Kennebec (12%) and Chieftain (12%). Shepody, which brokers indicate may be on the rise, was mentioned as a secondary variety by 11% of the Ontario growers. It received no mention as a primary variety.

However, when asked about plans for this year, two Ontario growers gave Shepody as the primary variety and five more indicated it would be a second or third variety to be planted.

A1.3.2.7 Farm Size

There was a more even distribution of farms by size than was the case in the U.S.:

0	- 50	acres	25%
51	- 100	"	23%
101	- 200	"	21%
201+		"	31%

A1.3.2.8 End Users

Sixty percent of the growers (N.S. 50%, Ontario 62%) had the majority of their crop planted for tablestock. Eighteen percent had the majority planted for chippers. Eight percent of growers grew more than 50% of their crop as seed.

A1.3.3 Quebec

A total of 50 valid responses were obtained from the Quebec questionnaire.

A1.3.3.1 Factors Influencing Purchases

Responses were very similar to those in the U.S., Ontario and Nova Scotia, with "quality" being given as the most important factor in 52 percent of the cases. In addition, "quality" was the most frequently mentioned secondary factor (mentioned by 36 percent of all respondents). Price, size and communication were also mentioned as important factors.

The percentage of respondents rating various factors as "very important" were:

appearance	68%
quality	100%
price	82%
past performance	92%
size	90%
packaging	56%
area	82%
communication	96%

Another factor mentioned was "Florida test results" (by 6 percent of respondents).

A1.3.3.2 Information Sources

Respondents considering various information sources as "very important" in making their buying decisions were:

ag. reps	58%
brokers	26%
salesmen	66%
magazine/journal	54%
newsletter	74%

In response to probes to determine the very high level of responses to "salesmen", it was found that Quebec growers were generally referring to the New Brunswick producer with whom they had been dealing personally and directly.

A1.3.3.3 Size and Packaging

Responses were similar to those in the U.S., Ontario and Nova Scotia: 84 percent stated they had a preference for a particular size of seed. The most frequently mentioned size was 1-8 ozs. (by 10 percent of respondents). The distribution amongst all other sizes was fairly evenly spread.

For growers who specified a particular seed size, the reasons given for the preference were: "less waste" (37%); "more manageable" (15%); "fits the cutter" (10%); and "less disease" (10%).

Packaging preferences were similar to those in other areas, except that 75 lb. bags were the main preference:

75 lb	54%
bulk	35%
50 lb	6%

A1.3.3.4 Channels of Distribution

Direct purchases were the most common channel for acquiring seed:

direct	70%
broker	18%
broker and direct	4%

A1.3.3.5 Growing Area Preference

Two-thirds of the respondents stated a preference for seed from a particular growing area (exactly the same in Ontario and Nova Scotia). Of those responding, the following areas were mentioned:

New Brunswick	46%
Quebec	30%
PEI	21%
New Brunswick or PEI	3%

Sixty-one percent of the Quebec growers used New Brunswick seed in the past three years. Of these, 73 percent stated they were regular New Brunswick seed users. The majority of these growers indicated that the seed was "good".

Fifty-eight percent of growers have used Quebec seed in the past three years.

Thirty-six percent of growers used PEI seed in the last three years.

A1.3.3.6 Varieties

Primary varieties normally grown were: Kennebec (80%); Superior (12%); Green Mountain (4%); Katahdin (2%); and Norland (2%).

Secondary varieties mentioned included: Superior (78%); Kennebec (14%); and La Rouge, Kiswics and Norland (3% of each).

The distribution of planned varieties with those normally grown is very close. Of the primary varieties, Kennebec was the most often cited (75%) and Superior (18%). The distribution amongst the other varieties is very similar to the past three years.

A1.3.3.7 Farm Size

The majority of farms in Quebec were small (i.e., 0-50 acres); the sample, therefore, reflected the distribution of farm size, derived from the growers list. The distribution is as follows:

0 - 50 acres	66%
51 - 100 "	17%
100 - 200 "	13%
201+ "	4%

APPENDIX B

LIST OF PERSONS CONTACTED

(OTHER THAN NEW BRUNSWICK GROWERS AND SHIPPERS)

LIST OF CONTACTS

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APPENDIX C

U.S. STANDARDS FOR GRADES OF SEED POTATOES

U.S. Standards for Grades of Seed Potatoes[1]

(37 F.R. 8607)

Effective April 29, 1972

GRADE

51.3000 U.S. No. 1 Seed Potatoes.

TOLERANCES

51.3001 Tolerances.

APPLICATION OF TOLERANCES

51.3002 Application of tolerances.

SAMPLES FOR GRADE AND SIZE DETERMINATION

51.3003 Samples for grade and size determination.

DEFINITIONS

51.3004 Fairly well shaped.
51.3005 Nematode or tuber moth injury.
51.3006 Damage.
51.3007 Serious damage.
51.3008 Freezing.
51.3009 Soft rot or wet breakdown.
51.3010 External defects.
51.3011 Internal defects.
51.3012 Permanent defects.
51.3013 Condition defects.

METRIC CONVERSION TABLE

51.3014 Metric conversion table.

Authority: The provisions of this subpart issued under secs. 203, 205, 60 Stat. 1087, as amended, 1090 as amended; 7 U.S.C. 1622, 1624.

GRADE

§ 51.3000 U.S. No. 1 Seed Potatoes.

"U.S. No. 1 Seed Potatoes" consists of potatoes identified as certified seed of one variety by the State of origin which meet the following requirements:

a. Fairly well shaped;

b. Free from:
1. Freezing,
2. Blackheart,
3. Late blight tuber rot,
4. Nematode or tuber moth injury,
5. Bacterial ring rot, and
6. Soft rot or wet breakdown.

c. Free from serious damage caused by
1. Hollow heart.

d. Free from damage by any other cause (see tables 1 and 2).

e. Size:

1. Minimum diameter, unless otherwise specified, shall not be less than 1½ inches, and

2. Maximum size, unless otherwise specified, shall not exceed 3¼ inches in diameter or 12 ounces in weight.

f. For tolerances see § 51.3001.

TOLERANCES

§ 51.3001 Tolerances.

To allow for variations incident to proper grading and handling in the foregoing grade, the following tolerances, by weight, are provided as specified:

a. For defects:

1. 10 percent for potatoes in any lot that are seriously damaged by hollow heart;

2. 10 percent for potatoes that fail to meet the remaining requirements of the grade, including therein not more than 5 percent for external defects and not more than 5 percent for internal defects: *Provided*, That included in these tolerances not more than the following percentages shall be allowed for the defects listed:

	Percent
Bacterial ring rot	0.00
Serious damage caused by dry or moist type Fusarium tuber rot	2.00
Late blight tuber rot	1.00
Nematode or tuber moth injury	0.00
Variety mixture	0.25
Frozen soft rot or wet breakdown	0.50

Provided, That en route or at destination an additional 0.50 percent, or a total of 1 percent, shall be allowed for potatoes that are frozen or affected by soft rot or wet breakdown.

b. For off-size:

1. *For undersize.* Three percent for potatoes in any lot which fail to meet the required or specified minimum size except that 5 percent shall be allowed when the minimum size specified is 2¼ inches or more in diameter or 5 ounces or more in weight.

2. *For oversize.* Ten percent for potatoes in any lot that fail to meet the required or specified maximum size.

APPLICATION OF TOLERANCES

§ 51.3002 Application of tolerances.

Individual samples shall have not more than double the tolerances specified, except that at least 1 defective and 1 off-size potato may be permitted in any sample: *Provided*, That en route or at destination one-tenth of the samples may contain 3 times the tolerance permitted for potatoes that are frozen or affected by soft rot or wet breakdown: *And provided further*, That the averages for the entire lot are within the tolerances specified for the grade.

SAMPLES FOR GRADE AND SIZE DETERMINATION

§ 51.3003 Samples for grade and size determination.

Individual samples shall consist of at least 20 pounds. The number of such individual samples drawn for grade and size determination will vary with the size of the lot.

[1] Packing of the product in conformity with the requirements of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act or with applicable State laws and regulations.

Table 1. External defects

Defect	Damage: When materially detracting from appearance of the potato	Damage: or	Damage: When removal causes loss of more than 5% of total weight of potato
Air cracks	X		
Bruises	X		X
Cuts or trimming	X		
Enlarged lenticels	X		
External discoloration	X		
Flea beetle injury	X		X
Rhizoctonia	X		
Scab, pitted	X		X
Scab, russet	X		
Scab, surface	When more than 5% of surface affected		
Second growth	X		
Growth cracks	X		
Wireworm or grass damage	When any hole in a potato 2½ in. in diameter or 6 oz. in weight is more than ¾-in. long, or when the aggregate length of all holes is more than 1¼ in., or correspondingly shorter or longer holes in smaller or larger potatoes.		
Dirt	Dirt or other foreign matter is considered as causing damage when the individual potato is more than slightly dirty or slightly stained, or when more than a moderate amount of loose dirt or other foreign matter is present in the sample.		
Insects or worms	When present inside the potato		
Shriveling	When more than moderately shriveled, spongy, or flabby		
Sprouts	When more than 10% of the potatoes in any lot have any sprout more than 1 in. in length.		

§ 51.3011 Internal defects.

"Internal defects" are defects that cannot be detected without cutting the potato. Some internal defects are listed in table 2.

Table 2. Internal defects

Defect	*Damage*
Ingrown sprouts	When removal causes a loss of more than 5% of the total weight of the potato.
Internal discoloration occurring entirely within the vascular ring	When more than the equivalent of 3 scattered light brown spots ⅛ in. in diameter in a potato 2½ in. in diameter or 6 oz. in weight, or correspondingly lesser or greater number of spots in smaller or larger potatoes.
Internal discoloration outside of or not entirely confined within the vascular ring.	When removal causes a loss of more than 5% of the total weight of the potato.

§ 51.3012 Permanent defects.

"Permanent defects" are defects that are not subject to change during storage or shipment.

§ 51.3013 Condition defects.

"Condition defects" are defects that may develop or change during storage or shipment.

POOR

QUALITY

ORIGINAL